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STIKINE RIVER DATA REPORT, 1981 to 1983

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Abstract

The Stikine River is located in Northwestern British Columbia, drains 51 000 square kilometres, and crosses the international border into the Alaskan panhandle before discharging into the Pacific Ocean. A major potential development in the Canadian portion of the river basin is hydroelectric power generation, at several proposed dam sites on the Stikine and Iskut rivers. The Water Quality Branch carried out a study between 1981 and 1983, to describe current conditions with regard to the potential effect of proposed hydroelectrical developments on the quality of water flowing across the International border with Alaska. Seven principal sampling sites were chosen in the border reach and at locations near potential dam sites. Four sampling trips were taken in each of two years, and sampling times were chosen to correspond to major hydrological events: snowmelt, glacial melt, fall floods, and winter conditions under ice. Specific objectives were to examine spatial and temporal variability, to look for relationships between chemical, physical, and biological variables, to compare water quality conditions in the main river channel with a representative river sidechannels, and to characterize the water quality of selected tributaries. This data report includes a description of methods for sample collection and analysis, and a list of biological, chemical, and physical data.

Résumé

La rivière Stikine est située dans le Nord-Ouest de la Colombie-Britannique; elle draine une surface de 51 000 kilomètres carrés, et elle traverse la frontière internationale dans la région côtière du sud de l'Alaska avant de se déverser dans l'Océan Pacifique. La partie canadienne du bassin de la rivière pourrait être utilisée pour produire de l'énergie hydroélectrique, et plusieurs sites pour d'éventuels barrages ont été identifiés sur les rivières Stikine et Iskut. De 1981 à 1983, la Direction de la qualité des eaux a étudié l'état actuel du bassin afin d'évaluer l'effet potentiel du développement hydroélectrique proposé sur la qualité de l'eau qui traverse la frontière internationale. Sept principaux sites d'échantillonage ont été sélectionnés près de la frontière et des sites de harnachement proposés. Pendant une période de deux ans, quatre tournées annuelles d'échantillonnage ont été effectuées; les périodes d'échantillonnage choisies correspondaient à des événements hydrologiques majeurs, tels que la fonte des neiges et celle des glaces, les inondations automnales et les conditions hivernales sous la glace. Les objectifs specifiques étaient l'étude de la variabilité spatiale et temporelle; la recherche de relations entre les variables chimiques, physiques et biologiques; la comparaison de la qualité des eaux de la rivière elle-même et d'un chenal latéral; enfin, la caractérisation de la qualité des eaux de tributaires choisis. Le présent rapport de données comprend la description des méthodes d'échantillonnage et d'analyse, ainsi qu'une liste de données biologiques, chimiques et physiques.

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1. Introduction

The Stikine River originates in the Cassiar and Skeena mountains of British Columbia, drains an area of 51,000 square kilometers and crosses the international border into the Alaskan panhandle before discharging, through several distributary channels, into the Pacific Ocean. The upper portion of the Stikine River drains a semiarid plateau; the lower portion drains a heavily glaciated area of the coast mountains which is characterized by high precipitation. Eleven kilometers upstream of the international border the Stikine River is joined by its major tributary, the Iskut River, which drains a predominantly glaciated region and provides approximately 25% of the flow at the gauging station near Wrangell, Alaska. The combination of geography, geology and climate in the Stikine River basin results in a complex hydrological cycle and variable water quality conditions.

There are various uses of the Stikine River which may affect or be affected by ambient water quality. The major potential development in the Canadian portion of the river basin is hydroelectric power generation, at several proposed dam sites on the Stikine and Iskut rivers. Additionally, the interior region is rich in mineral deposits including copper, molybdenum, and coal, and is the site of current mining exploration. Construction of access roads associated with these developments may lead to increased recreational use including hunting, fishing, and river exploration. The Stikine is a salmon rearing river, and a Canadian commercial fishery has been

initiated near the confluence of the Iskut and Stikine rivers.

After crossing the International border, the river divides and flows through an estuary and delta, formed by sediments carried by the Iskut and Stikine rivers. This region sustains various aquatic organisms, components of food chains which support bottom fish and five species of commercial salmon. The river also carries suspended sediments and nutrients into Sumner, Stikine and Zimnovia Straits, potentially contributing to the productivity of the local fishery.

1.1 Mandate

In accordance with the Federal Policy Statement on Inland Waters, the Water Quality Branch (WQB) has a mandate to monitor the quality of water crossing the international boundary between Canada and the U.S. The WQB is also involved in the development and negotiation of water quality objectives, which identify the desirable levels of certain water quality variables for the protection of Canadian and American users. Additionally, the WQB assists in the review of impact statements submitted for the federal Environmental Impact and Review Process.

1.2 Overall Objective

The overall objective of this study was to describe current water quality conditions with regard to the potential effect of proposed hydroelectrical developments on the quality of water flowing across the International border with Alaska.

Impoundments will potentially lower the concentration of suspended sediments and associated nutrients, and change river morphology, reducing the area of sloughs, backwaters, and floodplains which provide rearing and feeding areas for aquatic organisms. To address these concerns, and to increase our understanding of biological and geochemical features of northern rivers, a two year study of ambient water quality conditions in the Stikine River was conducted from 1981 to 1983. The information generated by this study should provide input to the design of a water quality monitoring program, and to the development of water quality objectives, should they be required for the Stikine River.

1.3 Specific Objectives

Specific objectives of the study were as follows:

1. To determine the degree of spatial and temporal variability in selected water quality variables at three locations in the border reach of the Stikine River.

2. To look at differences in water quality between seasons and between locations at seven sites within the Stikine River basin. These sites were chosen to represent conditions in the border reach and near potential dam sites; the latter information was required to interpret data from the border area.

3. To look for relationships between chemical, physical and biological variables using data collected in 1 and 2.

4. To compare the quality of water and bed sediments in the main channel with the quality of water and bed sediments in a representative backwater area in the border reach of the Stikine River.

5. To characterize the water quality conditions in selected tributaries, chosen to represent glacial and non-glacial inputs to the border reach of the Stikine River.

The present report lists the data collected between 1981 and 1983 and includes descriptions of the methods of sample collection and analysis. This data report will be followed by an interpretive report, which will include statistical analyses and a description of ambient water quality conditions, with particular emphasis on spatial and temporal variability in the border reach of the Stikine River. A report will also be written which examines the accuracy of the non-filterable residue technique for estimating total suspended sediment concentration.

2. Methods

2.1 Field Methods

2.1.1 Sampling Stations

There were three groups of sampling stations in the Stikine River Basin:

1. Seven principal sampling stations, located on the Iskut and Stikine Rivers (Figure 1).
2. Three sampling stations on the Ketili River, chosen to represent a backwater area which might be eliminated as a result of upstream impoundments (Figure 2).
3. Eleven tributary stations, selected to characterize glacial and nonglacial inputs to the lower portion of the river basin (Figure 2).

Latitudes and longitudes of sampling stations are as follows:

2.1.1.1 Seven Principal Sampling Stations

Station # (Figure 1)	Station Name	NAQUADAT #	Latitude	Longitude
1	Stikine River at Highway Bridge	00BC08CB0001	58°2'36"	129°56'57"
2	Iskut River above confluence with Burrage Creek	00BC08CG0003	57°16'24"	130°16'30"
3	Ningunsaw River adjacent to Stewart-Cassiar Highway	00BC08CG0002	56°55'12"	130°9'24"
4	Iskut River above Snippaker Creek	00BC08CG0004	56°41'35"	130°53'30"

(Figure 1 cont)

Station #	Station Name	NAQUADAT #	Latitude	Longitude
5	Iskut River below Johnson River	00BC08CG0001	56°44'21"	130°40'24"
6	Stikine River above Choquette River	00BC08CF0002	56°49'45"	131°45'50"
7	Stikine River near Wrangell, Alaska	00AK08CF0001	56°42'07"	132°08'28"

2.1.1.2 Sampling Stations on the Ketili River

(Figure 2)

Station #	Latitude	Longitude
1	56°40'46"	131°57'17"
2	56°41'30"	132°57'53"
3	56°42'46"	132°01'04"

2.1.1.3 Tributary Stations

(Figure 2)

Station #	Station Name	Latitude	Longitude
A	Unnamed	56°39'07"	131°54'53"
B	Goat Creek	56°39'59"	131°58'13"
C	Unnamed	56°40'08"	131°58'32"
D	Shuktusa Branch	56°42'12"	132°04'34"
E	River draining Shakes Glacier	56°43'35"	132°07'23"
F	Dry Wash	56°42'17"	132°10'26"
G	Caralin Creek	56°43'56"	131°39'11"
H	Johnson River	56°44'03"	131°38'06"
I	Choquette River	56°49'28"	131°45'55"
J	River draining Great Glacier	56°48'42"	131°47'04"
K	Unnamed	56°46'05"	131°48'11"

2.1.2 Sampling Frequency

2.1.2.1 Seven Principal Sampling Stations

The timing of sampling trips was chosen from historical streamflow data to correspond approximately to the periods of snowmelt freshet, glacial melt freshet, fall floods, and ice cover. All seven stations were sampled for nutrients, major ions, metals, major elements, clay types, phytoplankton, and bacterioplankton in June, July, October, 1981 and June, July, October, 1982. Each station was sampled at three different locations in a cross section except for stations 2 and 3, at which three successive samples were obtained at the same location. Water samples were also obtained at 3 locations at stations 5, 6, and 7 in February, 1982 and February, 1983.

In June, July, and October of 1981 and 1982, stations 5, 6, and 7 were each sampled intensively on two days for a limited set of variables, to determine the degree of spatial variability through a cross section of the river.

2.1.2.2 Sampling Stations on the Ketili River

The three stations on the Ketili River were sampled, when accessible, in June, July, October 1981 and June, July, October 1982. Samples of both water and bed sediment were collected; for purposes of comparison, bed sediment samples were also obtained from the Stikine River near Wrangell, Alaska.

2.1.2.3 Tributary Stations

Tributary stations (Figure 2) were sampled in October 1981 and June, July and October 1982.

2.1.3 Sampling Methods

2.1.3.1 Water

Several methods were used to obtain water samples from the various stations in the Stikine River basin. The three most common methods were peristaltic pump, sampling frame, and grab samples; these methods are referred to as 1, 2, and 3, respectively, in Tables III, IV, VI, and VIII.

a) Peristaltic Pump

Water samples at stations 5, 6 and 7 were collected with a peristaltic pump (Masterflex #7549-1a), which was powered by a Honda E-300 portable generator. The intake for the pump was attached to a cable one meter above a 100 lb weight. Water from the desired depth

was pumped at a rate of approximately 4L/minute through 50 feet of braided poly vinyl chloride tubing and 6 feet of silicone rubber tubing, each of which had been tested for contamination for all variables studied.

Samples were taken with the peristaltic pump from 9 points (three depths, three locations across the river) at stations 5, 6 and 7 on each of two days during field trips in June,July and October of 1981 and 1982. Samples for analysis of total organic carbon, total inorganic carbon, nonfilterable residue, and total phosphorus were taken, and measurements of temperature, pH and conductivity were made at each point on both sampling days. On one of the two sampling days, three points in each cross section were sampled intensively for a suite of chemical and biological variables.

b) Sampling Frame

The sampling frame was used to obtain water samples at stations 1 to 4 from cableways, bridges or the river bank. A two litre polyethylene bottle was placed in a metal sampling frame, submerged, and filled as the frame was drawn up through the water column. The contents of the bottle were shaken thoroughly and poured into the appropriate sample bottles. When used from the river bank at sites 2 and 3, and from the

highway bridge at site 1, the water sample was taken between the river bottom and surface. When used from the cableway at site 4, water samples were taken from approximately the surface meter. For sampling in February of 1982 and 1983 at sites 5, 6 and 7 a bottle containing a stopper was placed in the frame, lowered through the ice, and the stopper removed after the bottle was submerged.

c) Surface Samples

Samples were obtained by filling bottles by hand from the surface metre of water. Samples were collected in this manner from the tributaries and from the three stations on the Ketili River.

2.1.3.2 Sediments

Bed sediment samples were taken from three locations on the Ketili River and from the Stikine River near Wrangell, Alaska using a Ponar dredge. Subsamples were taken from the dredged material for the analysis of organic carbon, organic nitrogen, particle size, and minerals; and for counts of algae and bacteria.

2.1.4 Sample Collection and Preservation Techniques

2.1.4.1 Water Samples

The variables measured at each sampling site are summarized in Table 1.

a) Temperature, pH, Conductivity

Temperature, pH, and conductivity were determined immediately upon collection of water samples. Temperature was measured by immersing a thermometer graduated in °C into a water sample; pH was determined with a pH meter model E488 (Metrohm); conductivity was measured using a Beckman RB 3 Solu Bridge.

b) Nonfilterable Residue (NFR)

Samples for analysis of nonfilterable residue were collected in a 250 ml polyethylene bottle.

c) Discharge

Discharge data are the daily mean discharge taken from the Inland Waters Directorate (1981, 1982) publication of Surface Water Data, and the U.S. Geological Survey publications of Water Resources Data Alaska, Water Years 1981, 1982. Discharge data for February, 1983 are preliminary and subject to revision. An approximate estimate of discharge for the Stikine River above Choquette River has been obtained by subtracting daily mean discharge of the Iskut River below Johnson River from the Stikine River near Wrangell Alaska.

d) Metals (Zn, Cu, Fe, Mn)

Samples were collected in a 250 ml polyethylene bottle and preserved with 0.5 ml of concentrated nitric acid.

e) Mercury

Samples were collected in a 100 ml teflon bottle and preserved with 2 ml of solution containing 50% nitric acid and 2.5% potassium dichromate.

f) Major Ions and Physical Measurements

Samples for analysis of alkalinity, hardness, calcium, magnesium, potassium, sodium, chloride, silica, sulphate, and turbidity were collected in a 500 ml polyethylene bottle. Samples were stored on ice in the field and at 4°C in the laboratory, before analysis.

g) Total Phosphorus

Samples were collected in a 50 ml glass bottle and stored on ice in the field and at 4°C in the laboratory, before analysis.

h) Nitrate/Nitrite (field filtered)

Subsamples were taken from a 1L teflon bottle and filtered through a glass fibre filter (Whatman GF/F, @ 0.7µm pore size) into a 100 ml polyethylene bottle. Blanks of filtered, deionized water were prepared each day. All samples were stored on ice in the field and at 4°C in the laboratory, before analysis.

i) Total Dissolved Nitrogen, Dissolved Nitrate/Nitrite

Samples were collected in a 100 ml polyethylene bottle and stored on ice at 4°C until analysis.

j) Total Inorganic Carbon/Total Organic Carbon (TIC, TOC)

Samples were collected in a 100 ml polyethylene bottle and stored on ice and at 4°C until analysis.

k) Dissolved Inorganic Carbon (Field Filtered) (DIC)

Samples were collected, filtered, and stored as in h) above.

l) Particulate Organic Carbon/Particulate Organic Nitrogen (POC, PON)

Subsamples of 30 to 500 ml in volume (depending on the suspended sediment concentration) were taken from a 1L teflon bottle and filtered through a GF/F glass-fibre filter (0.7µm) which had been pretreated in a muffle furnace to remove organic material. The filter was washed with 0.5 ml of 0.1 N sulphuric acid, followed by several millilitres of deionized water. The filters were removed and stored in desiccators on ice until return to the laboratory, at which time they were frozen. Blanks of filters alone and the filter washing procedure were prepared each day.

m) Clays and Major Elements

Six litres of water from three locations in a cross section were combined and filtered through one or more 142 mm filters (S&S, 0.45µm). The filters were kept damp and transported back to the laboratory in a 300 ml polyethylene bottle.

n) Bacteria

Water samples for bacterial counts were collected in 1L autoclaved teflon bottles, using the peristaltic pump, sampling frame, or direct collection of a surface sample. Samples were treated as soon as possible after collection, a period not generally exceeding 4 hours.

o) Phytoplankton

Water samples for analysis of phytoplankton were collected in 250 ml polyethylene bottles and preserved with approximately 2 ml of acid Lugols solution.

2.1.4.2 Bed Sediment Samples

Subsamples of sediment for analysis of organic carbon and nitrogen were collected in 100 ml polyethylene bottles and transported to the laboratory on ice. Subsamples for analysis of elements by plama emission spectroscopy were collected in 100 ml glass bottles. Subsamples for particle size analysis were collected in Whirlpak bags and

submitted to the Water Resources Branch Sediment laboratory. Subsamples for phytoplankton analysis were collected in a 5 cc syringe, added to polyethylene bottles containing 250 ml of deionized water and preserved with approximately 2 ml of acid Lugols solution. Subsamples for bacteriological analysis were collected from the dredged material using a sterile 5 cc syringe, and treated upon return to the field laboratory as described in section 2.2.2.1.

2.2 Analytical Methods

2.2.1 Chemical Methods

Most of the analytical methods for chemicals in water are described in the Analytical Methods Manual 1979, published by the Inland Waters Directorate. Following are the NAQUADAT numbers, when applicable; the detection limits, and a brief statement describing each technique.

2.2.1.1 Non Filterable Residue

NAQUADAT #10401, detection limit 10.0 mg/l. A sample aliquot is passed through a preignited Whatman GF/C filter. The residue is oven dried at 105 °C, cooled, and weighed.

2.2.1.2 Zinc (total)

Depending on the concentration, zinc was analyzed either by atomic absorption with direct aspiration (NAQUADAT #30004, detection limit .01 mg/l) or atomic absorption with solvent extraction (NAQUADAT #30005, detection limit .001 mg/l).

2.2.1.3 Copper (total)

Depending on the concentration, copper was analyzed either by atomic absorption with direct aspiration (NAQUADAT #29006, detection limit .01 mg/l) or atomic absorption with solvent extraction (NAQUADAT #29005, detection limit .001 µg/l).

2.2.1.4 Iron (total)

NAQUADAT #26004, detection limit .05 mg/l. Atomic absorption with direct aspiration.

2.2.1.5 Manganese (total)

NAQUADAT #25004, detection limit .01 mg/l. Atomic absorption with direct aspiration.

2.2.1.6 Mercury (total)

NAQUADAT #80011, detection limit 0.05 µg/l. Flameless atomic absorption on an autoanalyzer.

2.2.1.7 Alkalinity (total)

NAQUADAT #10101, detection limit 0.5 mg/l. Potentiometric titration method.

2.2.1.8 Hardness (total)

NAQUADAT #10603, detection limit 0.5 mg/l. Titration with EDTA.

2.2.1.9 Calcium (dissolved)

NAQUADAT #20101, detection limit 0.5 mg/l. EDTA titration with "Calver II" indicator.

2.2.1.10 Magnesium (dissolved)

NAQUADAT #12101. The value for Magnesium and the detection limit are calculated from the values of the total hardness (determined by EDTA titration) and dissolved Calcium.

2.2.1.11 Potassium (dissolved)

NAQUADAT #19103, detection limit 0.2 mg/l. Flame photometry by internal standard on an autoanalyzer.

2.2.1.12 Sodium (dissolved)

NAQUADAT #11103, detection limit 0.2 mg/l. Flame photometry with internal standard on an autoanalyzer.

2.2.1.13 Chloride (dissolved)

NAQUADAT #17206, detection limit 0.2 mg/l. Colourimetry on an autoanalyzer using ferric nitrate and mercury thiocyanate.

2.2.1.14 Silica (reactive)

NAQUADAT #14105, detection limit 0.2 mg/l. Colourimetry using heteropoly blue method on an autoanalyzer.

2.2.1.15 Sulphate (dissolved)

NAQUADAT #16306, detection limit 0.5 mg/l. Colourimetry on an autoanalyzer with Barium chloride and methylthymol blue.

2.2.1.16 Turbidity

NAQUADAT #02073, detection limit 0 JTU. Photometry using an Hach turbidimeter.

2.2.1.17 Total Phosphorus

NAQUADAT #15406, detection limit 0.002 mg/l. Colourimetry on an autoanalyzer with ammonium molybdate.

2.2.1.18 Dissolved Nitrate/Nitrite (field filtered)

NAQUADAT #07119, detection limit 0.002 mg/l. Analysis performed on field filtered sample (0.7µm GF/F) using colourimetry on an autoanalyzer.

2.2.1.19 Total Dissolved Nitrogen

NAQUADAT #07651, detection limit 0.01 mg/l. UV digestion followed by colourimetry on an autoanalyzer.

2.2.1.20 Dissolved Nitrate/Nitrite

NAQUADAT #07110, detection limit 0.002 mg/l. Sample analyzed by colourimetry on an autoanalyzer.

2.2.1.21 Total Inorganic Carbon

NAQUADAT #06051, detection limit 0.5 mg/ℓ. Infrared analysis.

2.2.1.22 Total Organic Carbon

NAQUADAT #06001, detection limit variable. Infrared analysis.

2.2.1.23 Dissolved Inorganic Carbon (field filtered)

NAQUADAT #06153, detection limit 0.5 mg/ℓ. Infrared analysis.

2.2.1.24 Particulate Organic Carbon (field filtered)

Similar to NAQUADAT #06902, detection limits variable. Thermal conductivity method using a CHN analyzer.

2.2.1.25 Particulate Organic Nitrogen (field filtered)

Similar to NAQUADAT #07902, detection limits variable. Thermal conductivity method using a CHN analyzer.

2.2.1.26 Total Elemental Analysis of Sediments

The <100 mesh size sediment fraction was digested using aqua regia (concentrated nitric acid and hydrochloric acid) and hydrofluoric acid. The digestion was carried out in teflon bombs over a 45 min. period at 110 °C. Ten millilitres of 5% boric acid was then added to the digest, reheated to 110 °C for 30 min. and diluted for analysis with an Inductively Coupled Plasma Spectrometer (ICP). For details of the digestion method see Bennett (1977), and Price and Whiteside (1977).

2.2.1.27 X-ray Diffraction Analysis of Clay Size Sediment Fraction

The sediment samples were washed and pretreated using the method described by Kittrick and Hope (1963). The clay size fraction was then subjected to Mg and K saturation using standard glycerol solution and heating to 300° and 550 °C. X-ray diffraction analysis was carried out using a Phillips PW Diffractometer.

2.2.1.28 Organic Carbon and Nitrogen in Sediments

Sediment samples were first dried at 110°C overnight, then pulverized in a shatterbox (Spex Ind. Inc.). Inorganic carbon was removed by suspending the pulverized sediment in 0.3% (v/v) sulfuric acid for 30 min. The sediment was then filtered, washed with deionized distilled water, and

transferred to a petri-dish to be dried in a heated vacuum desiccator at 66-70°C overnight. The dried residue was then ready to be analyzed for particulate carbon and nitrogen.

Particulate Carbon

The method was identical to NAQUADAT #06903 (thermal conductivity using a CHN analyzer), except that the dried, acid-washed sediment was loaded in a tin boat for combustion.

Particulate Nitrogen

Method was identical to NAQUADAT #07903 (thermal conductivity using a CHN analyzer), except that the dried, acid-washed sediment was loaded in a tin boat for combustion.

2.2.2 Biological Methods

2.2.2.1 Bacteria

a) Water

The technique used to measure bacterial numbers and activity was adapted from Hobbie, Daley and Jasper (1977), Zimmerman, Iturriaga and Becker-Birck (1978), and Tabor and Neihof (1981). Biomass was estimated with conversion factors from Watson et al., (1977),

using cell lengths measured by epifluorescent microscopy and an average cell width determined by scanning electron microscopy.

Three ten ml aliquots of each water sample were pipetted into sterilized, foil wrapped test tubes. One ml of INT solution and 0.1 ml of sodium succinate (each sterilized immediately before use by passage through a swimnex filter containing a 0.1µm nuclepore filter) were added to two of the three test tubes. The test tubes were placed in a pan of river water and incubated at in situ temperatures. After 20 minutes, 0.1 ml of filtered (0.1µm) formalin was added to each test tube. The tubes were stored at 4C in the dark until analysis, a period not exceeding one month.

Depending upon the concentration of bacteria and/or sediment, from 0.2 to 5 ml of preserved water sample were used for epifluorescent counts. Stikine River water, sterilized by passage through a nuclepore (0.1µm) filter, was added to preserved samples if necessary to ensure a minimum volume of 2 ml for filtration. Volumes of 2-5 ml were stained to a final concentration of .01% with acridine orange, before filtration through a nuclepore (0.1µm) filter which had been immersed for 24h in a Sudan Black solution.

Filters were rinsed with 2 ml of deionized water, placed on slides while still moist, and mounted in oil. Slides were examined within one hour of preparation.

The total numbers of bacteria which fluoresced orange, yellow, or green were counted in 10 microscope fields for each slide. A calibrated eyepiece grid was used to define the area to be counted within each microscope field. Preparations were diluted so that each grid contained approximately 20 to 40 cells. Without looking through the microscope, the stage micrometer was used to choose the location of 10 microscope fields which represented the area of the filter. After counting the number of cells within each grid, the number of cells which contained formazan dots was counted. The length of 100 bacterial cells was measured by assigning each cell to a size class, in increments of 0.5 eyepiece units (1 EPU = 0.9 µm).

The average amount of the microscope field which was hidden by sediment particles was estimated, and a correction factor applied, if required, to bacterial counts.

For scanning electron microscopy, two to ten ml volumes

of Stikine River water were filtered through nuclepore filters (0.2µm pore size). The filter paper was immersed in a solution of 0.5% glutaraldehyde in 0.06 M cacodylate buffer, pH 8.0, which had been equilibrated to river temperature (Geesey and Costerton, 1979). Upon return to the laboratory, preserved samples were treated in one of two ways. Some samples were postfixed with 5% glutaraldehyde, followed by 2% osmium tetroxide, followed by a dehydration series of 30, 50, 70 and 100% acetone. The membranes were then dried by the critical point method, mounted, coated with gold, and examined under the scanning electron microscrope. An alternative method consisted of filtering the preserved sample through a nuclepore filter (0.2µm) and substituting the water by rinsing with graded ethanol (30, 70, 96, and 100%) and Freon 113 (Krambeck, Krambeck and Overbeck, 1981).

Biomass calculations were based on the following assumptions (Watson et al, 1977): bacterial shape approximates that of an ideal cylinder, average bacterial width from scanning electron microscopy is estimated at 0.3µm, bacterial density is 1.1 g/cm^3, bacterial carbon is 0.1 times the cell density. Cell lengths were measured using the fluorescent microscope.

b) Sediments

Approximately 1 cc of sediment was added to 90 ml of filter sterilized phosphate buffer. Ten ml of INT formazan and one ml of sodium succinate were added, and the samples incubated and preserved as described above.

In the laboratory, preserved sediment samples were poured into a beaker containing a magnetic stirrer. While sediments were kept in suspension aliquots were removed and subsequently diluted, stained, filtered and examined as above. The dry weight of the sediment was determined by removing five-10 ml aliquots, filtering through tared, preweighed filter discs (47 mm dia, 0.7µm pore size), and weighing after 24h at 60 C. Cell counts were converted to cells/g dry weight of sediment.

2.2.2.2 Algae

a) Water

Planktonic algae were enumerated using the Utermöhl (1958) technique. Water samples were analyzed by settling volumes of 5 or 10 ml and enumerating algal cells with an inverted phase contract microscope. Ten microscope transects were examined at 625x magnification, and all algae identified and counted. Because of the extremely high sediment concentration in

many samples, dilution was necessary in certain cases. The concentration of phytoplankton was too low to allow the appropriate number of cells (usually 200) to be counted for statistical analysis.

Reference works consulted for species identification are listed on page 28. Names of original papers and other publications can be provided if required.

Cell volumes were determined using cell measurements and geometric formulae. Total phytoplankton carbon biomass (mg C m^3) was calculated from an assumed cell density of 1g ml^{-1} and a carbon content of 2.5% of wet weight for diatoms and 5% for all other groups (St. John et al. 1976).

b) Sediments

Upon return to the laboratory, the sample was shaken thoroughly and two ml added to 98 ml of deionized water. Four-five ml chambers were then filled from this 2% solution. Ten transects were counted for each chamber. To convert from cell counts/ml to cell counts/g, three 10-ml aliquots were removed from the original sample bottle (sediments were kept in suspension with a magnetic stirrer), filtered through predried, tared filter paper, and sediment weights determined.

2.2.3 Physical Methods

Particle Size Analysis

Particle size analysis of bed sediments was carried out by the Water Resources Branch sediment laboratory in New Westminster, B.C. Particle size was determined by sieve analysis, using sieve sizes of 0.5 mm, 0.25 mm, 0.125 mm, and 0.0625 mm.

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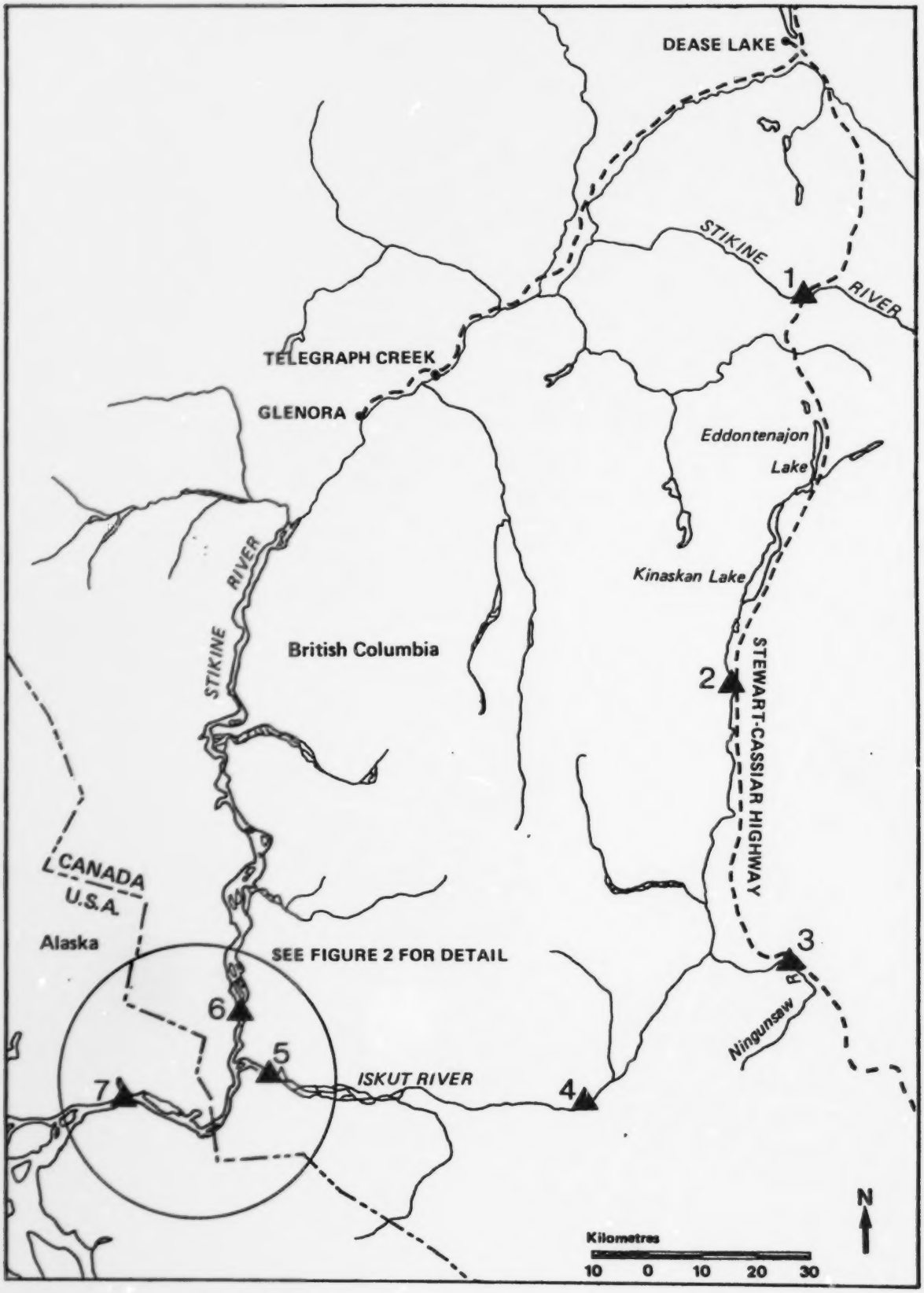

Figure 1 Seven principal sampling stations in the Stikine River Basin

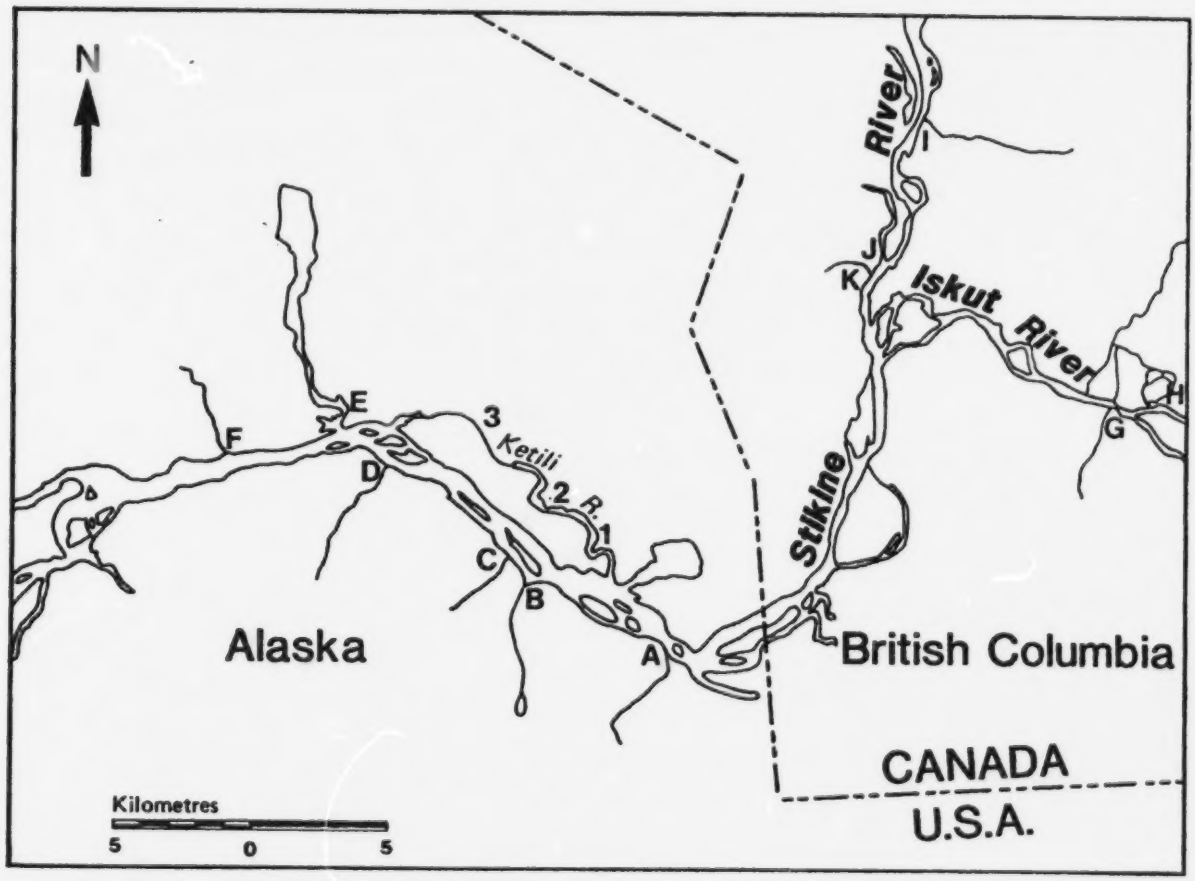

Figure 2 Sampling sites on the Ketili River and on tributaries to the Iskut and Stikine Rivers

Table I

Summary of Variables Measured at Each Sampling Site

Groups of Variables	Stations 1-7	Stations 5-7 Intensive Sampling	Tributaries	Ketili River Water	Ketili River and Station 7 Sediments
Temp, pH, Cond	+	+			
Clays	+				
Elements	+				+
Metals	+				
Major Ions and Physical Parameters	+	NFR	+		
Nutrients (C,N,P)	+	P, TIC/TOC	Diss. N, Diss. NO_2/NO_3 P, TIC/TOC	+	Organic C Organic N
Bacteria and Phytoplankton	+			+	+
Particle Size Analysis					+

+ Indicates that all variables within the group were measured

Table II

Key to Abbreviations Used in Data Tables

Depth m	Approximate sampling depth in meters.
Dist. Bank	Distance from the bank: 1. Midway between midstream and right bank. 2. Midstream. 3. Midway between midstream and left bank.
Samp. Meth.	Sampling method: 1. Peristaltic pump. 2. Sampling frame. 3. Grab sample.
NFR	Non filterable residue.
Discharge	Mean Daily Discharge.
Alk	Alkalinity.
Hard	Hardness.
NO_2/NO_3 mg/ℓ-F	F - field filtered.
Total N mg/ℓ-D	D - "dissolved", decanted from a settled sample.
NO_2/NO_3 mg/ℓ-D	D - "dissolved", decanted from a settled sample.
$Cells^5/ml$ (Bact)	Number of bacterial cells per millilitre ($\times 10^5$).
mg C/m^3 (Bact)	Bacterial biomass.
Cell L. (Bact)µm	Bacterial cell length.
% Active (Bact)	Percentage of bacteria which are metabolically active.
Cells/ml (Phyt)	Number of algal cells/ml.
mg C/m^3 (Phyt)	Algal biomass.
Part Size	Particle size.

Table III Water Quality Data from the Seven Principal Sampling Sites

00BC08CB0001 (#1) Stikine River at Highway Bridge

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
02/06/81	S200	-	3	2	0845	7.0	7.4
02/06/81	S201	-	2	2	0900	7.0	7.4
02/06/81	S202	-	1	2	0915	7.0	7.4
19/07/81	S276	-	3	2	0700	12.0	7.6
19/07/81	S277	-	2	2	0715	12.0	7.6
19/07/81	S278	-	1	2	0730	12.0	7.6
12/10/81	S410	-	3	2	0930	3.0	7.5
12/10/81	S411	-	2	2	0950	3.0	7.5
12/10/81	S412	-	1	2	1010	3.0	7.5
22/05/82	S535	-	3	2	0830	6.5	7.6
22/05/82	S536	-	2	2	0850	6.5	7.6
22/05/82	S537	-	1	2	0910	6.5	7.6
09/07/82	S635	-	3	2	0830	11.0	7.6
09/07/82	S636	-	2	2	0850	11.0	7.6
09/07/82	S637	-	1	2	0910	11.0	7.6
07/10/82	S735	-	3	2	0905	4.0	7.5
07/10/82	S736	-	2	2	0925	4.0	7.5
07/10/82	S737	-	1	2	0945	4.0	7.5

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
02/06/81	80	249	1600	.016	.016	8.2
02/06/81	80	193	1600	.015	.016	7.4
02/06/81	80	228	1600	.016	.017	7.4
19/07/81	85	150	1010	.013	.019	8.0
19/07/81	85	160	1010	.013	.014	8.0
19/07/81	85	130	1010	.015	.015	8.0
12/10/81	145	11	173	.014	.004	.08
12/10/81	145	<10	173	.004	.006	.45
12/10/81	145	<10	173	.007	.009	2.5
22/05/82	120	84	286	.011	.012	.15
22/05/82	120	68	286	.012	.012	.22
22/05/82	120	76	286	.005	.008	.24
09/07/82	105	57	768	.010	.010	4.6
09/07/82	105	67	768	.027	.008	4.1
09/07/82	105	51	768	.012	.008	4.1
07/10/82	150	<10	201	.014	.002	.38
07/10/82	150	<10	201	.05	.004	.34
07/10/82	150	<10	201	.02	.009	.35

Table III (cont'd) 00BC08CB0001 (#1) Stikine River at Highway Bridge

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
02/06/81	.20	<.05	29.9	34.9	9.6	2.7	.7	1.4
02/06/81	.18	<.05	29.2	34.6	9.7	2.5	.5	1.3
02/06/81	.18	<.05	28.9	34.2	10.0	2.2	.5	1.3
19/07/81	.15	<.05	32.1	40.4	11.4	2.9	.5	1.3
19/07/81	.14	<.05	32.3	40.4	10.7	3.3	.3	1.2
19/07/81	.15	<.05	31.8	40.0	10.5	3.3	.3	1.2
12/10/81	.01	<.05	55.9	75.4	18.1	7.3	.2	2.3
12/10/81	.01	<.05	55.9	73.4	19.7	5.9	.2	2.3
12/10/81	.02	<.05	55.9	71.5	18.9	5.9	.2	2.3
22/05/82	.11	<.05	41.4	49.0	13.5	3.7	1.0	2.0
22/05/82	.10	<.05	40.7	48.0	13.3	3.6	.8	1.9
22/05/82	.10	<.05	40.5	48.2	13.6	3.5	.7	1.8
09/07/82	.15	<.05	33.2	41.1	10.9	3.4	.5	1.3
09/07/82	.15	<.05	32.7	40.7	10.9	3.3	.4	1.3
09/07/82	.14	<.05	32.8	40.5	10.9	3.2	.4	1.3
07/10/82	<.01	<.05	52.5	63.6	17.7	4.7	.3	2.2
07/10/82	<.01	<.05	52.1	62.6	17.3	4.7	.3	2.2
07/10/82	<.01	<.05	51.6	62.0	17.5	4.4	.3	2.2

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
02/06/81	.9	4.8	5.9	.315	.030	-	-
02/06/81	.9	4.8	5.6	.189	.016	-	-
02/06/81	.9	4.8	5.6	.215	.020	-	-
19/07/81	.6	4.3	8.5	.147	.011	-	-
19/07/81	.5	4.1	8.4	.176	.013	-	-
19/07/81	.6	4.1	8.2	.171	.018	-	-
12/10/81	.2	5.4	14.3	.008	.004	.215	<.002
12/10/81	.2	5.4	13.9	.007	.046	.355	<.002
12/10/81	.2	5.6	14.0	.006	.028	.060	.010
22/05/82	1.0	4.9	6.3	.144	.014	.292	.020
22/05/82	.8	5.0	6.4	.107	.014	.308	.018
22/05/82	.9	5.0	6.4	.081	.013	.271	.016
09/07/82	.4	4.3	7.7	.077	.012	.125	.011
09/07/82	.4	4.3	7.6	.065	.011	.137	.013
09/07/82	.3	4.3	7.6	.092	.009	.086	.009
07/10/82	.2	5.4	11.8	.018	.009	.086	.009
07/10/82	.2	5.4	12.0	.012	.011	.125	.015
07/10/82	.2	5.4	11.8	.012	.008	.092	.009

Table III (cont'd) 00BC08CB0001 (#1) Stikine River at Highway Bridge

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
02/06/81	-	7.6	4.4	8.0	1.120	<.1
02/06/81	-	7.4	4.0	7.0	1.133	<.1
02/06/81	-	7.6	4.0	6.0	.902	<.1
19/07/81	80.	7.3	1.6	7.3	2.03	.164
19/07/81	84.	7.3	<.5	7.3	2.32	.181
19/07/81	81.	7.2	1.2	7.3	2.03	.203
12/10/81	1.5	16.3	1.2	15.9	.046	<.1
12/10/81	1.4	15.9	1.1	15.7	.026	<.1
12/10/81	1.9	16.3	1.0	15.3	.002	<.1
22/05/82	130.	11.0	61.0	11.0	.99	<.167
22/05/82	160.	11.0	26.0	11.0	.94	<.167
22/05/82	145.	11.0	16.0	11.0	.94	<.167
09/07/82	33.	9.3	7.3	8.4	1.04	<.1
09/07/82	47.5	9.3	6.6	8.1	1.00	<.1
09/07/82	43.	8.8	7.1	8.1	.79	<.1
07/10/82	5.2	13.0	5.8	12.0	.138	<.05
07/10/82	5.1	13.0	3.9	12.0	.176	<.05
07/10/82	2.3	13.0	4.9	12.0	.137	<.05

Date D /M /Y	Cells[5]/ml (Bact)	mg C/m³ (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m³ (Phyt)
02/06/81	5.4	3.5	.8	15	11	.2
02/06/81	8.1	4.2	.7	16	29	.4
02/06/81	9.8	5.4	.7	8	48	.9
19/07/81	6.5	3.9	.8	21	13	.4
19/07/81	5.3	3.2	.8	23	17	.4
19/07/81	6.0	3.9	.8	21	7	.2
12/10/81	1.5	.7	.6	0	44	1.0
12/10/81	2.1	1.1	.7	5	33	.8
12/10/81	2.3	1.3	.7	1	41	.5
22/05/82	3.5	2.1	.7	25	40	1.0
22/05/82	4.6	3.7	1.0	26	50	.9
22/05/82	7.1	5.3	1.0	27	117	2.4
09/07/82	1.2	.7	.7	37	58	.7
09/07/82	1.2	.9	.9	31	106	1.7
09/07/82	1.4	.9	.9	34	85	.8
07/10/82	1.2	.8	.9	27	131	1.8
07/10/82	.9	.6	.9	25	112	2.0
07/10/82	.8	.5	.9	23	121	1.7

Table III (cont'd) 00BC08CG0003 (#2) Iskut River above Burrage Creek

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S209	-	3	2	0900	5.0	7.5
05/06/81	S210	-	3	2	0915	5.0	7.5
05/06/81	S211	-	3	2	0930	5.0	7.3
21/07/81	S285	-	3	2	0720	9.0	7.7
21/07/81	S286	-	3	2	0740	9.0	7.7
21/07/81	S287	-	3	2	0750	9.0	7.7
14/10/81	S418	-	3	2	0845	6.0	7.8
14/10/81	S419	-	3	2	0900	6.0	7.8
14/10/81	S420	-	3	2	0915	6.0	7.8
24/05/82	S545	-	3	2	0810	4.5	7.6
24/05/82	S546	-	3	2	0825	4.5	7.6
24/05/82	S547	-	3	2	0845	4.5	7.6
11/07/82	S645	-	3	2	0830	11.0	7.5
11/07/82	S646	-	3	2	0845	11.0	7.5
11/07/82	S647	-	3	2	0900	11.0	7.5
09/10/82	S745	-	3	2	0835	5.0	7.6
09/10/82	S746	-	3	2	0850	5.0	7.6
09/10/82	S747	-	3	2	0910	5.0	7.6

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
05/06/81	150	116	-	.011	.005	3.8
05/06/81	150	100	-	.011	.005	4.4
05/06/81	150	99	-	.014	.007	4.7
21/07/81	150	110	-	.022	.012	8.0
21/07/81	150	120	-	.016	.016	7.0
21/07/81	150	120	-	.013	.008	7.0
14/10/81	240	<10	-	.003	.005	.85
14/10/81	240	<10	-	<.001	.004	2.1
14/10/81	240	<10	-	.002	.003	1.3
24/05/82	135	52	-	<.001	.006	1.6
24/05/82	135	23	-	.009	.005	1.5
24/05/82	135	32	-	.007	.007	1.7
11/07/82	175	33	-	.036	.005	5.3
11/07/82	175	41	-	.004	.005	5.2
11/07/82	175	47	-	.007	.004	5.1
09/10/82	220	24	-	.04	.006	2.5
09/10/82	220	23	-	.04	.006	2.5
09/10/82	220	24	-	.07	.006	2.9

Table III (cont'd) 00BC08CG0003 (#2) Iskut River above Burrage Creek

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
05/06/81	.91	<.05	55.0	71.1	19.8	5.3	.5	2.7
05/06/81	.10	<.05	54.4	71.1	19.9	5.2	.5	2.7
05/06/81	.11	<.05	54.9	70.7	20.0	5.0	.5	2.7
21/07/81	.18	<.05	49.9	67.5	18.1	5.4	.7	2.3
21/07/81	.16	<.05	49.4	67.1	18.4	5.1	.6	2.3
21/07/81	.15	<.05	49.9	67.5	17.8	5.6	.6	2.3
14/10/81	.02	<.05	64.1	95.3	24.4	8.3	.4	3.1
14/10/81	.03	<.05	64.1	93.3	23.4	8.5	.4	3.1
14/10/81	.02	<.05	64.1	95.3	23.4	9.0	.4	3.1
24/05/82	.05	<.05	56.4	72.3	19.2	5.9	.5	3.1
24/05/82	.05	<.05	56.4	71.5	19.1	5.8	.5	3.1
24/05/82	.06	<.05	56.6	72.5	19.3	5.9	.5	3.1
11/07/82	.05	<.05	53.6	74.7	19.7	6.2	.3	2.4
11/07/82	.05	<.05	54.1	75.3	19.7	6.3	.5	2.5
11/07/82	.05	<.05	54.8	75.1	20.0	6.1	.4	2.5
09/10/82	.05	<.05	66.0	91.0	24.7	7.1	.5	3.2
09/10/82	.05	<.05	65.8	90.6	24.6	7.1	.5	3.2
09/10/82	.06	<.05	65.9	90.8	25.0	6.9	.5	3.2

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
05/06/81	.5	6.1	20.0	.110	.040	-	-
05/06/81	.5	6.1	20.5	.112	.043	-	-
05/06/81	.5	6.1	20.5	.113	.030	-	-
21/07/81	.5	5.5	19.8	.166	.027	-	-
21/07/81	.5	5.5	20.3	.163	.022	-	-
21/07/81	.5	5.5	20.0	.124	.029	-	-
14/10/81	.3	6.4	27.0	.018	.015	.055	.007
14/10/81	.3	6.4	27.0	.017	.015	.060	.008
14/10/81	.3	6.5	27.0	.015	.013	.060	.007
24/05/82	.6	6.1	16.2	.067	.085	.252	.087
24/05/82	.7	6.2	16.8	.073	.087	.230	.087
24/05/82	.8	6.1	16.8	.068	.087	.269	.085
11/07/82	.3	5.4	22.0	.061	.026	.078	.015
11/07/82	.3	5.4	22.5	.050	.015	.073	.016
11/07/82	.3	5.4	22.5	.043	.017	.097	.016
09/10/82	.4	5.6	28.0	.053	.023	.086	.018
09/10/82	.4	5.6	27.0	.055	.019	.087	.019
09/10/82	.4	5.6	28.0	.064	.021	.077	.020

Table III (cont'd) 00BC08CG0003 (#2) Iskut River above Burrage Creek

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
05/06/81	-	13.6	<.8	12.0	.952	<.1
05/06/81	-	14.0	<.8	12.0	.897	.117
05/06/81	-	14.0	<.8	12.0	.710	<.1
21/07/81	64.	12.2	2.5	12.6	1.77	.152
21/07/81	60.	11.7	3.7	12.1	1.92	.188
21/07/81	60.	12.2	2.0	12.1	1.47	.100
14/10/81	6.3	18.6	<1.0	18.2	.202	<.1
14/10/81	3.6	18.4	<1.0	18.6	.219	<.1
14/10/81	3.3	18.6	<1.0	18.4	.117	<.1
24/05/82	9.0	15.0	6.9	15.0	.307	<.167
24/05/82	9.8	16.0	7.1	15.0	.417	<.167
24/05/82	110.	15.0	8.1	15.0	.667	<.167
11/07/82	26.	15.0	5.7	15.0	.726	<.1
11/07/82	23.5	15.0	5.4	16.0	.891	<.1
11/07/82	22.	14.0	5.4	15.0	.637	<.1
09/10/82	25.0	17.0	4.4	15.0	.325	<.05
09/10/82	24.0	17.0	4.2	15.0	.444	<.05
09/10/82	28.0	15.0	4.7	15.0	.496	<.05

Date D /M /Y	Cells[5]/ml (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
05/06/81	7.4	3.9	.7	10	37	.5
05/06/81	7.4	4.2	.7	11	64	.9
05/06/81	8.2	4.6	.7	7	58	.9
21/07/81	5.1	2.9	.7	15	9	<.1
21/07/81	5.0	3.2	.8	12	15	.2
21/07/81	5.3	3.2	.8	17	5	<.1
14/10/81	3.4	1.5	.6	6	57	1.1
14/10/81	4.6	2.2	.6	4	46	1.2
14/10/81	3.3	1.6	.6	3	43	.6
24/05/82	3.6	2.6	.9	26	12	.2
24/05/82	2.9	2.0	.9	33	18	3.2
24/05/82	2.7	2.1	1.0	29	23	.4
11/07/82	1.0	.7	.9	33	21	.4
11/07/82	1.7	1.1	.9	31	15	.2
11/07/82	1.5	1.0	.9	31	36	.6
09/10/82	1.3	.8	.8	15	31	.6
09/10/82	1.3	.9	.8	16	32	.6
09/10/82	1.3	.8	.8	22	37	.9

Table III (cont'd) 00BC08CG0002 (#3) Ninqunsaw River near Bob Quinn Lake

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/06/81	S203	-	1	2	0830	5.0	7.3
03/06/81	S204	-	1	2	0845	5.0	7.3
03/06/81	S205	-	1	2	0900	5.0	7.3
20/07/81	S281	-	1	2	0815	5.0	7.5
20/07/81	S282	-	1	2	0825	5.0	7.5
20/07/81	S283	-	1	2	0840	5.0	7.5
13/10/81	S414	-	1	2	0900	4.0	7.7
13/10/81	S415	-	1	2	0910	4.0	7.7
13/10/81	S416	-	1	2	0920	4.0	7.7
23/05/82	S540	-	1	2	0840	2.5	7.4
23/05/82	S541	-	1	2	0900	2.5	7.4
23/05/82	S542	-	1	2	0910	2.5	7.4
10/07/82	S640	-	1	2	0850	7.0	7.3
10/07/82	S641	-	1	2	0905	7.0	7.3
10/07/82	S642	-	1	2	0915	7.0	7.3
08/10/82	S740	-	1	2	0855	5.0	7.4
08/10/82	S741	-	1	2	0905	5.0	7.4
08/10/82	S742	-	1	2	0915	5.0	7.4

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge . m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
03/06/81	105	30	-	.004	.001	1.5
03/06/81	105	27	-	.004	.004	1.5
03/06/81	105	30	-	.003	.002	1.4
20/07/81	85	230	-	.038	.025	13.
20/07/81	85	170	-	.034	.021	13.
20/07/81	85	200	-	.030	.023	13.
13/10/81	185	<10	-	.001	.009	.40
13/10/81	185	<10	-	.002	.007	.45
13/10/81	185	<10	-	<.001	.003	.75
23/05/82	165	<10	-	.001	.002	.49
23/05/82	165	17	-	.001	.003	.48
23/05/82	165	13	-	<.001	.001	.10
10/07/82	110	33	-	.007	.006	3.2
10/07/82	110	38	-	.004	.007	3.4
10/07/82	110	39	-	.002	.005	3.2
08/10/82	200	<10	-	.03	.002	.65
08/10/82	200	<10	-	.12	.016	.55
08/10/82	200	<10	-	.05	.004	.60

Table III (cont'd) 00BC08CG0002 (#3) Ningunsaw River near Bob Quinn Lake

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
03/06/81	.03	<.05	25.8	43.3	14.2	1.9	<.2	1.1
03/06/81	.03	<.05	26.1	43.1	14.3	1.8	<.2	1.1
03/06/81	.03	<.05	26.5	43.3	14.2	1.9	<.2	1.1
20/07/81	.30	<.05	20.8	37.7	11.2	2.4	.7	.8
20/07/81	.30	<.05	22.2	39.7	11.6	2.6	.8	.8
20/07/81	.30	<.05	21.4	38.1	11.3	2.4	.8	.8
13/10/81	<.01	<.05	43.4	83.4	25.9	4.5	<.2	1.9
13/10/81	<.01	<.05	43.4	83.4	25.2	5.0	<.2	1.9
13/10/81	.01	<.05	43.4	83.4	25.2	5.0	<.2	2.0
23/05/82	.01	<.05	38.1	65.5	20.8	3.3	<.2	1.9
23/05/82	.01	<.05	38.3	66.1	21.1	3.3	<.2	1.9
23/05/82	.01	<.05	38.6	66.3	21.3	3.2	.5	2.0
10/07/82	.10	<.05	21.9	42.1	13.4	2.1	.4	.9
10/07/82	.10	<.05	22.8	42.5	13.2	2.3	.4	.9
10/07/82	.10	<.05	22.5	42.3	13.4	2.1	.4	.9
08/10/82	.02	<.05	41.1	81.7	26.6	3.7	.2	1.9
08/10/82	.03	<.05	40.5	81.3	26.4	3.7	.2	1.9
08/10/82	.02	<.05	40.7	81.1	26.4	3.7	.2	1.9

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
03/06/81	.3	3.7	19.0	.036	.091	-	-
03/06/81	.3	3.7	18.5	.039	.101	-	-
03/06/81	.3	3.8	19.5	.035	.105	-	-
20/07/81	.9	2.7	15.1	.300	.032	-	-
20/07/81	1.1	2.7	15.5	.280	.032	-	-
20/07/81	1.1	2.7	15.5	.290	.030	-	-
13/10/81	.2	4.6	37.5	.003	.079	.120	.080
13/10/81	.2	4.8	38.0	.004	.082	.110	.075
13/10/81	.2	4.5	38.5	.003	.079	.105	.076
23/05/82	.3	4.8	24.5	.009	.630	.720	.640
23/05/82	.2	4.9	24.5	.009	.640	.733	.665
23/05/82	.2	4.9	25.0	.009	.645	.710	.655
10/07/82	.3	2.5	18.5	.057	.023	.091	.025
10/07/82	.3	2.5	17.5	.056	.020	.066	.023
10/07/82	.3	2.6	18.5	.054	.020	.091	.025
08/10/82	.2	3.7	40.5	.016	.063	.105	.059
08/10/82	.2	3.7	40.5	.017	.070	.137	.072
08/10/82	.2	3.7	40.5	.017	.070	.278	.093

Table III (cont'd) 00BC08CG0002 (#3) Ningunsaw River near Bob Quinn Lake

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
03/06/81	-	6.6	1.0	6.0	.225	<.1
03/06/81	-	6.6	.8	7.0	.207	<.1
03/06/81	-	6.6	1.2	6.0	.192	<.1
20/07/81	160.	4.6	2.5	3.9	2.04	.445
20/07/81	156.	4.4	1.9	4.3	2.06	.457
20/07/81	156.	4.4	3.2	4.3	2.68	.513
13/10/81	1.2	12.4	<.7	12.0	<.100	<.1
13/10/81	2.1	12.2	<.6	12.0	<.100	<.1
13/10/81	.90	12.4	<.7	12.2	<.100	<.1
23/05/82	5.2	11.0	5.3	10.0	<.167	<.167
23/05/82	5.8	10.0	5.6	10.0	.116	<.167
23/05/82	2.2	11.0	5.4	10.0	<.167	<.167
10/07/82	32.5	5.6	6.0	4.9	.351	<.1
10/07/82	42.	5.9	5.7	4.9	.420	<.1
10/07/82	43.5	5.9	5.7	5.3	.300	<.1
08/10/82	4.6	10.0	2.9	8.7	.134	<.05
08/10/82	5.4	10.0	2.7	9.0	.098	<.05
08/10/82	4.48	10.0	3.1	8.9	.159	<.05

Date D /M /Y	Cells^5/ml (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
03/06/81	3.1	1.7	.7	11	16	.5
03/06/81	4.6	2.8	.8	10	21	.6
03/06/81	3.4	1.9	.7	8	18	.6
20/07/81	3.4	2.4	.9	31	9	.2
20/07/81	6.7	3.7	.7	12	11	.3
20/07/81	4.3	2.8	.8	23	2	<.1
13/10/81	1.2	.6	.6	2	10	.2
13/10/81	1.4	.8	.7	4	10	.2
13/10/81	1.6	.9	.7	4	6	.1
23/05/82	1.2	1.0	1.1	30	75	1.7
23/05/82	1.0	.8	1.1	36	66	1.6
23/05/82	1.2	.8	.8	39	62	12.2
10/07/82	.4	.3	.9	17	5	<.1
10/07/82	.9	.8	1.1	24	5	.1
10/07/82	.9	.6	.9	28	5	.3
08/10/82	.8	.5	.8	30	44	1.0
08/10/82	.7	.5	.8	25	53	.9
08/10/82	.9	.5	.7	14	50	1.0

Table III (cont'd) 00BC08CG0004 (#4) Iskut River above Snippaker Creek

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/06/81	S206	1	3	2	0815	6.0	7.3
04/06/81	S207	1	2	2	0830	6.0	7.3
04/06/81	S208	1	1	2	0845	6.0	7.3
23/07/81	S392	1	3	2	0935	9.5	8.0
23/07/81	S393	1	2	2	0955	9.5	7.9
23/07/81	S394	1	1	2	1000	9.5	7.9
15/10/81	S511	1	3	2	1015	7.0	7.9
15/10/81	S512	1	2	2	1022	7.0	7.9
15/10/81	S513	1	1	2	1030	7.0	7.9
02/06/82	S550	1	3	2	1400	7.5	7.0
02/06/82	S551	1	2	2	1410	7.5	7.1
02/06/82	S552	1	1	2	1413	7.5	7.0
19/07/82	S650	1	3	2	1410	8.0	7.4
19/07/82	S651	1	2	2	1420	8.0	7.4
19/07/82	S652	1	1	2	1430	8.0	7.4
02/10/82	S755	1	3	2	1400	9.0	8.0
02/10/82	S756	1	2	2	1407	9.0	8.0
02/10/82	S757	1	1	2	1415	9.0	8.0

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
04/06/81	140	246	768	.032	.024	13.
04/06/81	140	273	768	.036	.027	14.
04/06/81	140	265	768	.040	.030	14.
23/07/81	105	160	1100	.06	.04	21.
23/07/81	107	420	1100	.05	.04	24.
23/07/81	105	400	1100	.05	.04	21.
15/10/81	150	380	418	.029	.018	8.7
15/10/81	150	290	418	.036	.022	9.6
15/10/81	150	280	418	.028	.018	8.8
02/06/82	108	647	681	.024	.026	19.
02/06/82	105	526	681	.029	.028	29.
02/06/82	100	271	681	.029	.024	-
19/07/82	127	132	585	.04	.015	8.5
19/07/82	127	151	585	.04	.016	11.
19/07/82	127	140	585	.03	.013	9.5
02/10/82	150	58	217	.03	.010	6.0
02/10/82	150	56	217	.05	.010	5.5
02/10/82	150	45	217	.05	.012	5.5

Table III (cont'd) 00BC08CG0004 (#4) Iskut River above Snippaker Creek

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
04/06/81	.29	<.05	48.9	62.5	19.9	3.1	.8	1.7
04/06/81	.32	<.05	47.9	62.5	19.5	3.4	.7	1.8
04/06/81	.32	<.05	47.8	61.5	19.3	3.2	.7	1.7
23/07/81	.63	<.05	47.3	63.5	19.8	3.4	.7	1.2
23/07/81	.73	<.05	47.0	61.1	19.5	3.0	.7	1.2
23/07/81	.64	<.05	47.6	63.5	20.1	3.2	.7	1.2
15/10/81	.34	<.05	55.9	83.4	24.3	5.5	.7	1.9
15/10/81	.37	<.05	55.9	79.4	23.6	5.0	.6	1.9
15/10/81	.34	<.05	55.9	79.4	24.3	4.5	.6	1.9
02/06/82	.36	<.05	45.1	62.1	19.0	3.6	.8	1.4
02/06/82	.52	<.05	47.4	62.9	19.2	3.6	.7	1.5
02/06/82	.36	<.05	46.5	62.9	19.2	3.6	.8	1.6
19/07/82	.22	<.05	45.3	61.8	18.9	3.5	.5	1.3
19/07/82	.26	<.05	47.6	63.2	19.5	3.5	.4	1.3
19/07/82	.24	<.05	46.2	62.0	18.9	3.6	.5	1.3
02/10/82	.15	<.05	50.0	70.5	22.2	3.7	.5	1.6
02/10/82	.15	<.05	50.2	71.1	22.3	3.7	.5	1.7
02/10/82	.14	<.05	50.1	71.3	22.2	3.9	.6	1.7

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
04/06/81	1.4	4.3	16.2	.260	.055	-	-
04/06/81	1.0	4.4	17.2	.290	.065	-	-
04/06/81	1.0	4.3	16.0	.275	.065	-	-
23/07/81	.4	3.0	12.2	.515	.018	.084	.032
23/07/81	.4	3.0	12.5	.530	.029	.067	.038
23/07/81	.5	3.0	12.5	.520	.014	.030	.017
15/10/81	.7	3.8	22.5	.365	.063	.065	.036
15/10/81	.7	3.8	22.5	.720	.033	.040	.018
15/10/81	.6	3.7	22.0	.395	.039	.055	.028
02/06/82	1.1	4.3	13.4	1.18	.124	.246	.141
02/06/82	1.1	4.2	13.6	.525	.126	.240	.143
02/06/82	1.1	4.2	13.5	.415	.124	.264	.143
19/07/82	.4	2.8	14.6	.220	.021	.070	.023
19/07/82	.4	2.8	15.4	.245	.020	.062	.022
19/07/82	.4	2.8	15.5	.245	.023	.065	.021
02/10/82	.4	2.9	21.0	.127	.029	.094	.041
02/10/82	.4	2.9	22.0	.095	.075	.074	.028
02/10/82	.5	2.9	21.0	.125	.204	.245	.185

Table III (cont'd) 00BC08CG0004 (#4) Iskut River above Snippaker Creek

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
04/06/81	-	12.6	<.7	11.0	1.47	.213
04/06/81	-	12.1	1.4	11.0	1.10	.134
04/06/81	-	12.0	1.4	11.0	1.05	.134
23/07/81	200.	11.0	2.3	9.4	1.53	<.167
23/07/81	192.	11.4	3.1	9.4	2.86	.207
23/07/81	319.	11.4	2.7	9.4	.962	<.167
15/10/81	190.	15.7	1.4	13.4	.506	<.167
15/10/81	140.	15.7	1.4	14.7	1.64	<.167
15/10/81	140.	16.1	2.0	14.1	1.41	<.167
02/06/82	66.	13.0	3.0	12.0	3.34	.278
02/06/82	75.	13.0	3.0	13.0	3.40	.293
02/06/82	71.	13.0	2.6	13.0	2.96	.335
19/07/82	84.	12.0	1.7	9.5	.713	<.167
19/07/82	62.	13.0	<.7	11.0	.803	<.167
19/07/82	85.	13.0	<.7	12.0	.803	<.167
02/10/82	65.0	12.0	4.2	10.0	.440	<.125
02/10/82	69.0	12.0	3.9	11.0	.683	<.125
02/10/82	68.0	12.0	3.9	11.0	.298	<.125

Date D /M /Y	Cells[5]/ml (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) μm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
04/06/81	5.3	2.5	.6	18	11	.2
04/06/81	5.2	3.0	.7	9	19	.5
04/06/81	4.1	2.3	.7	17	3	.1
23/07/81	5.9	3.2	.7	15	53	1.1
23/07/81	6.9	4.1	.8	17	11	<.1
23/07/81	9.1	5.5	.8	25	53	1.3
15/10/81	5.0	3.1	.8	34	74	1.4
15/10/81	5.7	3.2	.7	5	117	.8
15/10/81	5.4	3.2	.8	25	180	2.9
02/06/82	3.6	2.6	1.1	32	70	1.9
02/06/82	3.6	2.6	1.0	30	76	2.1
02/06/82	4.3	3.2	1.0	32	86	1.7
19/07/82	1.1	.6	.8	35	11	.1
19/07/82	.6	.3	.7	30	21	.4
19/07/82	.7	.4	.8	39	5	.1
02/10/82	1.2	.7	.8	24	11	.8
02/10/82	1.2	.7	.7	25	32	.5
02/10/82	1.5	.8	.7	21	11	.5

Table III (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S251	1	1	1	1044	9.0	8.2
05/06/81	S252	3	2	1	1050	8.0	8.3
05/06/81	S256	3	3	1	1102	8.0	8.2
19/07/81	S328	0	1	1	1102	10.5	8.2
19/07/81	S329	4	2	1	1110	10.5	8.1
19/07/81	S333	3	3	1	1142	11.0	8.2
12/10/81	S441	3	2	1	1220	5.0	7.8
12/10/81	S443	1	2	1	1232	5.0	7.8
12/10/81	S445	3	3	1	1244	5.0	7.8
17/02/82	S524	1	3	2	1100	.0	6.8
17/02/82	S525	1	2	2	1130	.0	6.7
17/02/82	S526	1	1	2	1145	.0	6.6
04/06/82	S601	1	3	1	1115	8.0	8.0
04/06/82	S602	2	2	1	1130	8.0	8.0
04/06/82	S606	1	1	1	1140	8.0	8.0
21/07/82	S688	2	1	1	1030	7.0	8.1
21/07/82	S692	2	2	1	1040	7.0	8.2
21/07/82	S696	1	3	1	1052	7.0	8.2
04/10/82	S792	1	1	1	1138	5.5	7.8
04/10/82	S796	1	2	1	1147	5.5	7.8
04/10/82	S797	5	3	1	1152	5.5	7.8
17/02/83	S905	1	3	2	1100	.0	8.1
17/02/83	S906	1	3	2	1115	.0	8.0
17/02/83	S907	1	2	2	1145	.0	8.0

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
05/06/81	138	189	926	.017	.018	9.0
05/06/81	128	197	926	.021	.036	9.1
05/06/81	130	194	926	.016	.020	9.3
19/07/81	119	1000	1680	.04	.07	44.
19/07/81	105	1000	1680	.06	.08	48.
19/07/81	103	910	1680	.08	.07	43.
12/10/81	200	<10	236	.004	.005	1.7
12/10/81	200	<10	236	.009	.006	1.2
12/10/81	200	<10	236	.010	.008	1.7
17/02/82	220	<10	54	.001	<.001	.14
17/02/82	250	<10	54	<.001	<.001	.14
17/02/82	220	<10	54	.001	.002	.17
04/06/82	125	261	1100	.030	.022	17.
04/06/82	125	341	1100	.021	.030	22.
04/06/82	125	271	1100	.021	.027	18.
21/07/82	118	141	886	.03	.011	11.
21/07/82	120	139	886	.03	.007	11.
21/07/82	119	131	886	.03	.007	10.
04/10/82	132	49	289	.13	.012	4.1
04/10/82	140	45	289	.06	.009	4.4
04/10/82	138	60	289	.06	.011	4.2
17/02/83	245	17	65	.006	.002	.65
17/02/83	240	15	65	.004	.001	.37
17/02/83	230	<10	65	.004	<.001	.11

Table III (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
05/06/81	.21	<.05	48.4	60.5	19.6	2.8	1.0	2.0
05/06/81	.22	<.05	48.6	59.1	19.6	2.5	.9	2.0
05/06/81	.22	<.05	48.6	59.9	19.2	2.9	.9	2.0
19/07/81	1.3	<.05	45.6	57.6	18.5	2.8	1.0	1.3
19/07/81	1.4	<.05	44.7	57.6	18.4	2.8	1.1	1.3
19/07/81	1.2	<.05	43.5	56.4	18.5	2.5	1.2	1.2
12/10/81	.04	<.05	68.3	91.3	28.3	5.0	1.0	3.7
12/10/81	.03	<.05	68.3	91.3	27.5	5.5	1.0	3.7
12/10/81	.05	<.05	68.3	91.3	27.5	5.5	1.1	3.8
17/02/82	.02	<.05	98.2	123.	38.3	6.6	1.3	7.5
17/02/82	.03	.16	95.1	123.	36.8	7.6	1.4	6.9
17/02/82	.03	<.05	95.3	123.	36.8	7.6	1.3	6.3
04/06/82	.70	<.05	44.2	61.3	19.6	3.0	1.0	1.8
04/06/82	1.0	<.05	47.6	62.1	19.5	3.3	1.0	1.8
04/06/82	.75	<.05	54.1	62.5	19.7	3.2	1.1	1.9
21/07/82	.27	<.05	44.1	56.4	17.9	2.8	.7	1.5
21/07/82	.26	<.05	43.2	56.0	17.9	2.7	.7	1.5
21/07/82	.27	.18	42.9	54.8	17.8	2.5	.7	1.5
04/10/82	.11	<.05	51.5	65.9	21.3	3.1	1.0	2.5
04/10/82	.11	<.05	51.5	66.3	21.4	3.1	1.1	2.5
04/10/82	.11	<.05	51.4	69.2	21.3	3.9	1.0	2.5
17/02/83	.04	<.05	91.6	117.	38.3	5.2	1.3	5.9
17/02/83	.04	<.05	91.1	118.	38.3	5.4	1.3	6.9
17/02/83	<.01	<.05	97.6	110.	39.4	2.8	1.1	2.0

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
05/06/81	1.0	4.3	14.8	.220	.048	-	-
05/06/81	1.0	4.3	14.3	.280	.052	-	-
05/06/81	1.0	4.3	14.1	.235	.052	-	-
19/07/81	.7	3.1	11.4	1.33	.023	.200	.023
19/07/81	.9	3.1	11.1	1.63	.023	.044	.026
19/07/81	.8	3.0	10.5	1.45	.015	.039	.073
12/10/81	1.0	5.6	24.0	.032	.085	.155	.076
12/10/81	.9	5.6	24.0	.030	.078	.130	.075
12/10/81	.9	5.6	24.0	.046	.075	.115	.075
17/02/82	4.0	6.8	35.0	.005	.149	.187	.117
17/02/82	3.3	6.9	34.5	.005	.165	.220	.136
17/02/82	3.0	6.9	32.5	.005	.157	.205	.136
04/06/82	.9	4.2	12.9	.500	.134	.195	.135
04/06/82	.9	4.3	13.8	.715	.122	.184	.131
04/06/82	.9	4.3	13.8	.580	.104	.199	.134
21/07/82	.4	2.9	11.6	.310	.022	.085	.025
21/07/82	.4	2.9	12.7	.385	.024	.059	.023
21/07/82	.5	2.9	12.2	.635	.028	.090	.026
04/10/82	.8	3.7	16.0	.106	.039	.055	.040
04/10/82	.8	3.8	17.2	.108	.039	.062	.040
04/10/82	.9	3.7	17.2	.109	.041	.117	.041
17/02/83	3.2	6.6	30.5	.023	.144	.179	.147
17/02/83	3.8	6.6	34.0	.020	.128	.161	.132
17/02/83	.8	7.3	12.8	.006	.370	.391	.375

Table III (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
05/06/81	-	11.8	2.6	10.0	.532	<.1
05/06/81	-	12.0	2.6	10.0	.683	<.1
05/06/81	-	11.8	<.6	10.0	.717	<.1
19/07/81	320.	10.6	6.6	10.3	6.52	.936
19/07/81	340.	10.9	7.0	10.7	7.99	.833
19/07/81	320.	10.6	5.8	9.8	6.97	.703
12/10/81	1.4	19.5	<1.0	17.7	.026	<.167
12/10/81	7.7	19.7	<1.0	17.9	.025	<.167
12/10/81	1.2	19.7	<.9	17.7	.034	<.167
17/02/82	.42	28.5	<1.5	26.5	.030	<.01
17/02/82	.45	27.7	<1.5	27.1	.032	<.01
17/02/82	.52	27.7	<1.1	26.9	.026	<.01
04/06/82	76.	12.0	4.3	13.0	.804	<.167
04/06/82	80.	12.0	4.5	13.0	4.29	.423
04/06/82	76.	13.0	3.4	11.0	1.38	.150
21/07/82	51.	10.0	2.9	10.0	2.08	<.167
21/07/82	92.5	11.0	2.2	11.0	1.38	<.167
21/07/82	74.	11.0	2.6	10.0	1.33	<.167
04/10/82	45.0	13.0	2.8	11.0	.299	<.125
04/10/82	45.5	15.0	3.1	11.0	.219	<.125
04/10/82	42.0	16.0	3.2	11.0	.611	<.125
17/02/83	1.8	22.7	3.0	23.0	.095	<.017
17/02/83	.55	23.1	2.4	23.0	.047	<.017
17/02/83	.17	25.2	2.4	26.0	.031	<.017

Date D /M /Y	Cells[5]/ml (Bact)	mg C/m³ (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m³ (Phyt)
05/06/81	6.4	3.4	.7	16	21	.8
05/06/81	5.8	3.6	.8	13	29	.8
05/06/81	5.9	3.0	.6	16	3	<.1
19/07/81	9.0	5.8	.8	21	106	.9
19/07/81	11.0	6.6	.8	19	21	.0
19/07/81	8.0	5.1	.8	24	117	3.5
12/10/81	2.0	1.2	.8	3	2	<.1
12/10/81	1.7	.9	.7	11	2	<.1
12/10/81	2.2	1.2	.7	7	1	<.1
17/02/82	1.1	.6	.7	2	8	.3
17/02/82	1.2	.7	.7	1	14	.5
17/02/82	1.0	.6	.8	2	7	.1
04/06/82	3.2	2.1	.8	23	27	.2
04/06/82	3.8	2.6	.9	31	51	.9
04/06/82	2.9	2.1	.9	28	30	.7
21/07/82	1.6	1.0	.8	41	32	.4
21/07/82	1.8	1.5	1.1	31	32	1.6
21/07/82	1.1	.9	1.1	27	11	.5
04/10/82	1.4	.9	.8	19	11	5.4
04/10/82	.9	.5	.7	22	5	.2
04/10/82	.6	.3	.7	22	27	.2
17/02/83	.8	.6	.9	7	11	.1
17/02/83	.4	.2	.7	3	5	<.1
17/02/83	.1	.1	.8	-	2	<.1

Table III (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S259	3	1	1	0919	9.0	8.3
05/06/81	S263	1	2	1	0930	9.0	8.2
05/06/81	S264	7	3	1	0936	9.0	8.3
19/07/81	S336	4	1	1	1230	12.5	8.1
19/07/81	S340	1	2	1	1245	12.0	8.1
19/07/81	S341	7	3	1	1255	12.0	8.2
12/10/81	S448	3	1	1	1400	5.0	7.8
12/10/81	S453	1	2	1	1420	5.0	7.8
12/ 0/81	S455	3	3	1	1424	5.0	7.8
18/02/82	S528	1	3	2	1230	.0	6.8
18/02/82	S529	1	2	2	1215	.0	7.0
18/02/82	S530	1	1	2	1250	.0	7.0
04/06/82	S611	5	3	1	1218	8.0	8.1
04/06/82	S613	6	2	1	1225	8.0	8.1
04/06/82	S618	1	1	1	1246	8.0	8.1
21/07/82	S700	3	1	1	1153	9.0	8.2
21/07/82	S702	6	2	1	1202	9.0	8.2
21/07/82	S707	1	3	1	1215	9.0	8.2
04/10/82	S800	4	1	1	1300	6.0	7.8
04/10/82	S805	1	2	1	1314	6.0	7.7
04/10/82	S807	3	3	1	1320	6.0	7.8
16/02/83	S910	1	2	2	1200	.0	7.9
16/02/83	S911	1	1	2	1215	.0	7.9
16/02/83	S912	1	3	2	1230	.0	8.0

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
05/06/81	105	337	3661	.019	.030	12.
05/06/81	110	379	3661	.018	.027	12.
05/06/81	110	311	3661	.020	.035	11.
19/07/81	95	490	3530	.029	.05	18.
19/07/81	95	510	3530	.039	.05	19.
19/07/81	95	520	3530	.034	.05	20.
12/10/81	160	57	531	.026	.019	7.7
12/10/81	160	110	531	.022	.018	7.3
12/10/81	160	65	531	.021	.018	7.4
18/02/82	225	<10	107	<.001	.001	.29
18/02/82	210	<10	107	.001	.001	.24
18/02/82	220	<10	107	.002	.012	.25
04/06/82	95	586	2921	.023	.053	33.
04/06/82	90	763	2921	.024	.054	33.
04/06/82	90	702	2921	.029	.049	30.
21/07/82	110	163	2031	.02	.015	9.0
21/07/82	105	152	2031	.02	.006	8.5
21/07/82	105	132	2031	.03	.017	7.0
04/10/82	120	56	960	.04	.016	5.6
04/10/82	120	49	960	.02	-	4.2
04/10/82	120	33	960	.02	.010	4.1
16/02/83	185	<10	130	.002	.003	.06
16/02/83	220	<10	130	.006	.001	.35
16/02/83	220	<10	130	.004	.002	.14

Table III (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
05/06/81	.32	<.05	45.6	51.1	16.3	2.5	.9	1.6
05/06/81	.27	<.05	47.2	53.1	16.5	2.9	.9	1.6
05/06/81	.27	<.05	45.1	51.7	16.4	2.6	.9	1.6
19/07/81	.53	<.05	43.1	51.6	15.7	3.0	1.5	1.3
19/07/81	.55	<.05	43.4	52.0	16.5	2.6	1.3	1.2
19/07/81	.53	<.05	44.7	54.4	17.6	2.5	1.4	1.3
12/10/81	.16	<.05	66.2	79.4	24.3	4.5	1.0	3.5
12/10/81	.14	<.05	66.2	79.4	23.6	5.0	1.0	3.5
12/10/81	.14	<.05	66.2	79.4	22.8	5.5	.9	3.5
18/02/82	.03	<.05	93.7	107.	29.9	7.9	1.0	4.5
18/02/82	.01	.05	94.3	107.	29.4	8.2	1.0	4.4
18/02/82	.02	<.05	93.5	106.	29.1	8.1	1.0	4.4
04/06/82	1.3	<.05	44.0	51.1	15.8	2.8	1.2	1.5
04/06/82	1.4	<.05	43.8	51.7	16.2	2.7	1.4	1.5
04/06/82	1.3	<.05	43.7	51.5	16.2	2.7	1.4	1.5
21/07/82	.16	<.05	45.2	54.4	17.9	2.4	.9	1.3
21/07/82	.20	<.05	35.4	53.8	17.4	2.5	.9	1.3
21/07/82	.15	<.05	45.3	54.6	17.8	2.5	.9	1.3
04/10/82	.14	<.05	49.8	59.2	18.5	3.2	1.1	1.8
04/10/82	.10	<.05	50.1	59.4	18.3	3.3	1.1	1.8
04/10/82	.09	<.05	50.1	59.4	18.8	3.0	1.1	1.8
16/02/83	<.01	<.05	75.5	80.2	25.6	4.0	1.1	7.0
16/02/83	.03	.09	89.3	104.	31.2	6.3	1.1	4.5
16/02/83	.02	<.05	88.9	103.	31.0	6.2	1.1	4.5

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
05/06/81	1.0	5.3	8.2	.450	.045	-	-
05/06/81	1.6	5.3	6.5	.395	.043	-	-
05/06/81	1.1	5.3	7.5	.330	.044	-	-
19/07/81	.8	3.7	7.9	.705	.030	.074	.040
19/07/81	.8	3.7	7.2	.670	.026	.098	.041
19/07/81	.8	3.6	7.1	.585	.031	.123	.090
12/10/81	.9	6.1	14.2	.124	.046	.105	.075
12/10/81	1.0	6.2	13.9	.200	.054	.200	.070
12/10/81	1.1	6.1	13.9	-	.059	.115	.055
18/02/82	2.1	8.2	16.4	.010	.116	.234	.139
18/02/82	1.9	8.2	17.0	.008	.142	.246	.148
18/02/82	1.8	8.2	16.6	.008	.124	.215	.160
04/06/82	1.5	4.7	5.9	.925	.076	.254	.100
04/06/82	1.6	4.7	5.3	.995	.074	.271	.096
04/06/82	1.6	4.7	5.2	.880	.069	.272	.095
21/07/82	.5	3.7	8.1	.305	.028	.105	.026
21/07/82	.5	3.7	8.1	.240	.028	.073	.025
21/07/82	.5	3.7	7.7	.210	.028	.087	.028
04/10/82	.7	4.3	10.4	.172	.032	.210	.064
04/10/82	.7	4.3	10.4	.132	.033	.075	.028
04/10/82	.7	4.4	10.3	.112	.035	.067	.030
16/02/83	4.0	6.9	13.7	.044	.126	.175	.133
16/02/83	2.3	8.0	17.7	.007	.070	.212	.176
16/02/83	2.3	7.7	18.2	.007	.114	.166	.133

Table III (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
05/06/81	-	11.8	2.8	9.0	2.55	.130
05/06/81	-	11.6	1.8	9.0	1.59	<.1
05/06/81	-	11.1	4.3	9.0	1.88	<.1
19/07/81	200.	10.9	4.3	9.8	1.99	<.167
19/07/81	200.	11.3	2.7	10.3	2.75	<.167
19/07/81	180.	11.3	3.5	10.3	8.03	.255
12/10/81	75.	17.7	1.6	13.5	.894	<.167
12/10/81	80.	18.0	1.5	17.2	.955	<.167
12/10/81	65.	18.2	<1.0	17.4	-	-
18/02/82	1.20	26.3	<1.4	25.5	.037	<.01
18/02/82	.64	26.7	<1.4	25.9	.029	<.01
18/02/82	.63	26.3	1.6	25.9	.031	<.01
04/06/82	56.	12.0	8.2	11.0	4.72	.560
04/06/82	83.	11.0	8.4	11.0	5.43	.538
04/06/82	63.	11.0	9.0	11.0	6.21	.522
21/07/82	52.	11.0	3.5	11.0	1.27	<.167
21/07/82	37.5	11.0	4.1	11.0	2.10	<.167
21/07/82	42.5	11.0	3.1	11.0	1.75	<.167
04/10/82	42.0	12.0	3.3	11.0	.781	<.125
04/10/82	37.0	12.0	3.3	11.0	1.35	<.125
04/10/82	43.0	12.0	3.6	11.0	.876	<.125
16/02/83	.27	20.0	2.0	19.0	.032	<.017
16/02/83	2.5	24.0	2.0	23.0	.047	<.017
16/02/83	.92	24.0	<1.2	23.0	.040	<.017

Date D /M /Y	Cells^5/ml (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
05/06/81	13.0	7.3	.7	23	24	.9
05/06/81	7.6	3.6	.6	18	11	.3
05/06/81	8.3	4.5	.7	18	27	.9
19/07/81	11.0	6.9	.8	28	53	1.5
19/07/81	12.0	7.5	.8	14	117	.9
19/07/81	12.0	6.8	.7	8	117	3.0
12/10/81	5.1	2.7	.7	11	190	2.3
12/10/81	6.9	3.7	.7	15	159	1.7
12/10/81	1.2	.8	.8	22	159	2.0
18/02/82	1.3	.7	.7	1	2	<.1
18/02/82	.9	.4	.6	1	1	<.1
18/02/82	1.0	.5	.7	2	2	<.1
04/06/82	9.5	6.7	.9	30	122	1.9
04/06/82	7.0	6.3	1.2	20	227	3.8
04/06/82	9.5	7.8	1.1	27	217	3.5
21/07/82	2.1	1.7	1.0	37	7	.1
21/07/82	2.3	1.8	1.0	40	21	.7
21/07/82	2.3	1.7	1.0	37	21	.5
04/10/82	1.8	1.1	.8	22	27	1.0
04/10/82	1.8	1.1	.8	21	48	.8
04/10/82	1.9	1.1	.7	18	37	.5
16/02/83	.3	.2	.7	2	34	.4
16/02/83	.4	.2	.8	4	4	.1
16/02/83	.4	.2	.7	1	33	.4

Table III (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S267	7	1	1	1245	9.0	8.2
05/06/81	S271	4	2	1	1300	9.0	8.2
05/06/81	S275	1	3	1	1318	9.5	8.1
19/07/81	S346	1	1	1	1459	12.0	8.2
19/07/81	S347	7	2	1	1515	12.0	8.3
19/07/81	S351	3	3	1	1533	11.5	8.1
12/10/81	S430	4	1	1	0900	5.0	7.8
12/10/81	S435	1	2	1	0925	5.0	7.7
12/10/81	S437	1	3	1	0935	5.0	7.9
16/02/82	S520	1	1	2	1145	.0	8.4
16/02/82	S521	1	2	2	1200	.0	8.5
16/02/82	S522	1	3	2	1215	.0	8.5
04/06/82	S590	1	3	1	0951	8.5	7.8
04/06/82	S591	6	2	1	0955	8.5	7.8
04/06/82	S595	3	1	1	1013	8.5	7.8
21/07/82	S712	1	1	1	1352	10.0	8.1
21/07/82	S715	1	2	1	1402	10.0	8.1
21/07/82	S716	5	3	1	1406	10.0	8.1
04/10/82	S809	4	1	1	0941	5.5	7.8
04/10/82	S814	1	2	1	1000	5.5	7.7
04/10/82	S816	1	3	1	1008	5.5	7.8
15/02/83	S900	1	1	2	1030	.0	7.7
15/02/83	S901	1	2	2	1130	.0	7.7
15/02/83	S902	1	3	2	1230	.0	7.7

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	Zn mg/l	Cu mg/l	Fe mg/l
05/06/81	110	315	4587	.015	.030	11.0
05/06/81	120	294	4587	.024	.032	12.0
05/06/81	120	249	4587	.013	.022	9.6
19/07/81	90	280	5210	.05	.05	23.0
19/07/81	93	730	5210	.05	.06	26.0
19/07/81	95	670	5210	.05	.05	26.0
12/10/81	160	27	767	.008	.005	2.1
12/10/81	160	27	767	.010	.007	2.2
12/10/81	160	19	767	.012	.008	2.1
16/02/82	130	<10	161	.022	.003	.24
16/02/82	205	<10	161	.009	.008	.30
16/02/82	218	<10	161	.001	.002	.29
04/06/82	100	485	4021	.023	.048	30.
04/06/82	100	602	4021	.07	.09	54.
04/06/82	100	625	4021	.021	.044	28.
21/07/82	108	146	2917	.03	.012	7.5
21/07/82	110	176	2917	.03	.014	8.5
21/07/82	108	172	2917	.03	.019	8.0
04/10/82	80	35	1249	.03	.012	5.1
04/10/82	85	56	1249	.03	.012	4.9
04/10/82	100	56	1249	.01	.008	4.6
15/02/83	220	<10	195	.019	.002	.22
15/02/83	218	<10	195	.006	.001	.19
15/02/83	220	<10	195	.002	.002	.28

Table III (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Mn mg/l	Hg µg/l	Alk mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l
05/06/81	.27	<.05	43.8	49.8	16.4	2.1	1.0	1.7
05/06/81	.28	<.05	44.1	51.9	16.7	2.5	.9	1.7
05/06/81	.21	<.05	42.8	50.2	16.4	2.2	1.0	1.7
19/07/81	.67	<.05	41.6	52.8	16.2	3.0	1.5	1.3
19/07/81	.81	<.05	42.3	52.0	17.0	2.3	1.6	1.2
19/07/81	.76	<.05	51.7	52.0	16.8	2.4	1.3	1.1
12/10/81	.06	<.05	63.2	79.4	22.0	5.9	1.0	3.0
12/10/81	.07	<.05	64.2	81.4	22.6	6.1	1.0	3.1
12/10/81	.06	<.05	62.1	79.4	24.4	4.5	1.0	3.1
16/02/82	.03	<.05	92.3	105.	30.6	6.9	1.1	5.6
16/02/82	.03	<.05	91.2	107.	31.1	7.1	1.1	5.6
16/02/82	.03	<.05	92.0	107.	31.1	7.1	1.1	5.7
04/06/82	.54	<.05	43.9	53.1	16.6	2.8	1.2	1.6
04/06/82	1.7	<.05	44.7	53.9	16.9	2.8	1.2	1.6
04/06/82	1.3	<.05	44.2	53.3	16.6	2.9	1.2	1.6
21/07/82	.15	<.05	42.0	52.4	16.5	2.7	.8	1.3
21/07/82	.18	<.05	42.6	51.8	16.8	2.4	.8	1.3
21/07/82	.18	<.05	41.7	50.8	16.4	2.4	.8	1.3
04/10/82	.12	<.05	42.6	50.9	16.2	2.5	1.0	1.8
04/10/82	.11	<.05	44.9	54.2	17.3	2.7	1.1	1.9
04/10/82	.10	<.05	44.9	53.4	17.2	2.5	1.0	1.9
15/02/83	.03	<.05	84.1	102.	31.6	5.6	1.2	5.6
15/02/83	.02	<.05	85.0	102.	31.7	5.5	1.2	5.7
15/02/83	.03	<.05	87.4	103.	3[illegible].9	5.7	1.1	5.7

Date D /M /Y	Cl mg/l	Si mg/l	SO_4 mg/l	P mg/l	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
05/06/81	1.2	4.9	7.5	.425	.057	-	-
05/06/81	1.2	4.9	7.8	.365	.046	-	-
05/06/81	1.1	4.8	8.8	.325	.046	-	-
19/07/81	.9	3.4	7.7	.765	.028	.074	.038
19/07/81	.9	3.4	7.8	1.64	.027	.102	.055
19/07/81	.8	3.3	7.9	.735	.032	.201	.063
12/10/81	1.2	5.8	15.3	.110	.073	.150	.066
12/10/81	1.2	5.9	16.1	.088	.082	.110	.061
12/10/81	1.3	5.9	16.0	.058	.071	.125	.071
16/02/82	3.3	8.0	19.4	.008	.120	.223	.123
16/02/82	3.4	7.9	19.6	.008	.114	.190	.132
16/02/82	3.4	7.8	19.8	.008	.121	.218	.132
04/06/82	1.4	3.1	7.4	.670	.088	.256	.118
04/06/82	1.5	4.5	7.2	1.45	.085	.264	.120
04/06/82	1.4	4.5	7.3	.695	.095	.264	.110
21/07/82	.6	3.3	8.5	.215	.027	.073	.022
21/07/82	.5	3.3	8.6	.290	.027	.075	.028
21/07/82	.5	3.3	9.0	.275	.026	.075	.031
04/10/82	.8	3.6	9.3	.180	.033	.132	.038
04/10/82	.8	3.7	10.1	.108	.034	.065	.034
04/10/82	.8	3.7	10.0	.098	.037	.068	.036
15/02/83	3.8	7.1	22.0	.007	.103	.210	.126
15/02/83	3.8	7.2	22.0	.007	.120	.206	.151
15/02/83	3.8	7.1	22.0	.034	.056	.216	.126

Table III (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Turbidity J.T.U.	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
05/06/81	-	10.4	1.8	9.0	2.23	.145
05/06/81	-	11.2	1.5	9.0	4.48	.234
05/06/81	-	10.4	2.4	9.0	1.25	<.1
19/07/81	210.	10.2	4.3	9.8	2.97	.197
19/07/81	270.	12.5	4.3	7.1	6.05	.391
19/07/81	270.	11.3	3.9	8.4	3.64	.287
12/10/81	4.8	17.2	1.5	16.4	.308	<.167
12/10/81	4.7	18.1	<.9	17.2	.070	<.167
12/10/81	9.0	18.1	<.9	17.4	.292	<.167
16/02/82	1.80	25.7	<1.4	26.1	.037	<.01
16/02/82	.64	24.8	2.4	25.1	.050	<.01
16/02/82	.61	25.5	1.4	23.8	.047	<.01
04/06/82	70.	12.0	4.5	11.0	2.85	.338
04/06/82	65.	12.0	4.7	11.0	3.89	.434
04/06/82	66.	12.0	7.1	11.0	5.64	.649
21/07/82	71.	10.0	3.4	10.0	.738	<.167
21/07/82	50.	11.0	3.3	10.0	1.02	<.167
21/07/82	69.	9.9	4.1	10.0	1.70	<.167
04/10/82	49.5	9.7	3.1	9.1	.820	<.125
04/10/82	50.0	11.0	2.9	9.8	.609	<.125
04/10/82	50.0	11.0	3.0	9.5	.370	<.125
15/02/83	.65	23.1	3.0	23.0	.077	<.017
15/02/83	.50	22.1	2.0	23.0	.138	<.017
15/02/83	.55	21.5	4.0	23.0	.069	<.017

Date D /M /Y	Cells[5]/ml (Bact)	mg C/m³ (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m³ (Phyt)
05/06/81	12.0	6.4	.7	14	8	.1
05/06/81	7.0	3.7	.7	14	16	.4
05/06/81	9.9	5.0	.6	23	29	.6
19/07/81	14.0	9.1	.8	18	159	5.9
19/07/81	13.0	7.3	.7	18	117	1.3
19/07/81	14.0	7.4	.7	18	138	.9
12/10/81	3.1	1.7	.7	8	2	.1
12/10/81	3.0	1.7	.7	10	4	.1
12/10/81	3.9	2.2	.7	6	6	.1
16/02/82	1.2	.7	.7	1	1	<.1
16/02/82	1.3	.7	.7	2	1	<.1
16/02/82	1.7	.9	.7	5	3	<.1
04/06/82	8.0	5.4	.9	17	146	3.1
04/06/82	8.5	5.4	.9	23	211	4.2
04/06/82	7.3	6.2	1.2	30	281	5.0
21/07/82	1.3	.9	.9	33	21	.3
21/07/82	2.3	1.9	1.0	38	21	.3
21/07/82	2.0	1.3	.9	36	32	.3
04/10/82	1.5	.9	.8	27	21	.4
04/10/82	1.9	1.1	.7	27	37	1.0
04/10/82	1.0	.6	.8	25	27	.2
15/02/83	.6	.4	.7	4	1	<.1
15/02/83	.5	.3	.8	10	1	<.1
15/02/83	.6	.3	.7	3	2	<.1

Table IV Analysis of Suspended Sediment in Composite Samples from Seven Principal Sampling Sites

00BC08CB0001 (#1) Stikine River above Grand Canyon

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
02/06/81	S201	0900	2	7.0	7.4	80	223	916
19/07/81	S277	0715	2	12.0	7.6	85	147	-
12/10/81	S411	0950	2	3.0	7.5	145	<10	-
22/05/82	S536	0850	2	6.5	7.6	120	76	861
09/07/82	S636	0850	2	11.0	7.6	105	58	823
07/10/82	S736	0925	2	4.0	7.5	150	<10	761

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
02/06/81	2	178	1140	1000	98	34
19/07/81	-	600	3200	-	100	-
12/10/81	-	-	-	-	-	-
22/05/82	5	123	97	887	90	60
09/07/82	1	122	63	724	110	40
07/10/82	2	138	92	993	110	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
02/06/81	56	211	138	216	4310	227000
19/07/81	-	-	-	370	-	190000
12/10/81	-	-	-	-	-	-
22/05/82	10	188	160	333	3930	280000
09/07/82	5	189	137	307	3440	121000
07/10/82	10	180	120	245	2760	290000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
02/06/81	15200	802	9770	19800	80100	45700
19/07/81	15900	-	4000	-	60000	44000
12/10/81	-	-	-	-	-	-
22/05/82	17100	790	10600	12400	85500	50700
09/07/82	15200	1000	9420	14500	76900	37200
07/10/82	15500	1110	9000	13000	79100	40300

* Mean Values

Table IV (cont'd)

00BC08CG0003 (#2) Iskut River above Burrage Creek

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
05/06/81	S210	0915	2	5.0	7.5	150	105	760
21/07/81	S286	0740	2	9.0	7.7	150	117	-
14/10/81	S419	0900	2	6.0	7.8	240	<10	-
24/05/82	S546	0825	2	4.5	7.6	135	36	834
11/07/82	S646	0845	2	11.0	7.5	175	40	603
09/10/82	S746	0850	2	5.0	7.6	220	24	716

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
05/06/81	5	348	91	1180	172	47
21/07/81	-	291	2233	-	100	-
14/10/81	-	-	-	-	-	-
24/05/82	5	150	100	934	150	60
11/07/82	1	163	63	924	140	40
09/10/82	2	121	72	1270	90	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
05/06/81	117	142	146	206	5390	467000
21/07/81	-	-	-	500	-	155340
14/10/81	-	-	-	-	-	-
24/05/82	10	178	180	462	4610	276000
11/07/82	6	134	140	348	4120	158000
09/10/82	10	166	150	244	3400	217000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
05/06/81	16100	974	9230	27500	86900	59400
21/07/81	10388	-	5437	-	65048	46600
14/10/81	-	-	-	-	-	-
24/05/82	19000	1040	15000	13600	82400	58300
11/07/82	15600	1130	16000	9890	77400	47800
09/10/82	16700	1330	15200	15500	76800	45100

* Mean Values

Table IV (cont'd)

00BC08CG0002 (#3) Ninqunsaw River near Bob Quinn Lake

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
03/06/81	S204	0845	2	5.0	7.3	105	29	1210
20/07/81	S282	0825	2	5.0	7.5	85	200	-
13/10/81	S415	0910	2	4.0	7.7	185	<10	-
23/05/82	S541	0900	2	2.5	7.4	165	11	929
10/07/82	S641	0905	2	7.0	7.3	110	37	826
08/10/82	S741	0905	2	5.0	7.4	200	<10	691

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
03/06/81	17	559	-	1040	368	165
20/07/81	-	400	6100	-	100	-
13/10/81	-	-	-	-	-	-
23/05/82	8	200	180	1160	180	90
10/07/82	1	194	72	816	160	30
08/10/82	2	203	87	1430	170	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
03/06/81	413	130	174	1220	4300	581000
20/07/81	-	-	-	590	-	180000
13/10/81	-	-	-	-	-	-
23/05/82	40	157	190	563	3360	251000
10/07/82	6	116	175	263	3390	142000
08/10/82	9	148	163	247	3180	229000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
03/06/81	21400	1350	6780	33300	94500	54200
20/07/81	24250	-	3900	-	66000	49000
13/10/81	-	-	-	-	-	-
23/05/82	21300	1300	9600	10600	86900	59900
10/07/82	22300	1100	5590	12900	80100	42700
08/10/82	23000	1330	7120	14100	80800	45800

* Mean Values

Table IV (cont'd)

00BC08CG0004 (#4) Iskut River above Snippaker Creek

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
04/06/81	S207	0830	2	6.0	7.3	140	261	697
23/07/81	S393	0955	2	9.5	7.9	121	327	-
15/10/81	S512	1022	2	7.0	7.9	150	317	-
02/06/82	S551	1410	2	7.5	7.1	104	481	877
19/07/82	S650	1420	2	8.0	7.4	127	141	849
02/10/82	S756	1407	2	9.0	8.0	150	53	864

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
04/06/81	2	177	134	1160	97	30
23/07/81	-	286	86	-	100	-
15/10/81	-	-	-	-	-	-
02/06/82	5	109	67	1030	72	54
19/07/82	1	89	79	1230	60	20
02/10/82	2	96	94	1660	60	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
04/06/81	60	203	199	167	829	200000
23/07/81	-	-	-	152	-	180950
15/10/81	-	-	-	-	-	-
02/06/82	5	215	168	209	4350	229000
19/07/82	5	225	191	290	3920	120000
02/10/82	9	214	191	273	2870	236000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
04/06/81	20800	935	13700	23000	92100	58700
23/07/81	14690	-	13048	-	64762	36190
15/10/81	-	-	-	-	-	-
02/06/82	18400	840	16400	17700	82200	50700
19/07/82	21100	1260	21600	18100	86900	49900
02/10/82	22900	1270	18800	17800	93400	51400

* Mean Values

Table IV (cont'd)

00BC08CG0001 (#5) Iskut River above Johnson River

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
05/06/81	S252	1050	1	8.0	8.2	132	193	1080
19/07/81	S329	1110	1	11.0	8.2	109	970	-
12/10/81	S443	1232	1	5.0	7.8	200	<10	-
04/06/82	S602	1130	1	8.0	8.0	125	291	905
21/07/82	S688	1030	1	7.0	8.2	119	137	881
04/10/82	S797	1152	1	5.5	7.8	137	51	962

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
05/06/81	<2	137	77	1150	60	19
19/07/81	-	171	210	-	<100	-
12/10/81	-	476	238	-	<100	-
04/06/82	4	93	73	1100	50	50
21/07/82	9	99	76	1200	56	28
04/10/82	<2	125	87	1370	70	50

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
05/06/81	51	301	181	126	5250	197000
19/07/81	-	-	-	205	-	179487
12/10/81	-	-	-	333	-	163492
04/06/82	5	450	170	165	4110	275000
21/07/82	5	281	179	438	3800	117000
04/10/82	9	324	144	227	2780	89000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
05/06/81	19100	926	20000	24600	88200	55100
19/07/81	18355	-	14100	-	65812	47000
12/10/81	12460	-	13333	-	60317	44440
04/06/82	19000	930	20000	18700	83600	53500
21/07/82	20100	1340	20500	20400	86500	49000
04/10/82	21500	1240	29500	18400	77100	40500

* Mean Values

Table IV (cont'd)

00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
05/06/81	S263	0930	1	9.0	8.3	108	342	1130
19/07/81	S340	1245	1	12.0	8.1	95	507	-
12/10/81	S453	1420	1	5.0	7.8	160	77	-
04/06/82	S613	1225	1	8.0	8.1	92	684	954
21/07/82	S699	1150	1	9.0	8.2	107	149	884
04/10/82	S807	1320	1	6.0	7.8	120	46	1060

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
05/06/81	<2	153	86	1180	84	43
19/07/81	-	200	1900	-	<100	-
12/10/81	-	183	248	-	<100	-
04/06/82	4	114	69	992	62	48
21/07/82	1	104	85	1060	66	28
04/10/82	2	115	92	1720	60	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
05/06/81	60	328	173	115	5140	198000
19/07/81	-	-	-	290	-	150000
12/10/81	-	-	-	257	-	165138
04/06/82	5	303	155	125	3920	237000
21/07/82	5	316	154	577	3660	116000
04/10/82	9	320	166	325	3410	140000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
05/06/81	20100	978	25900	23300	88500	52900
19/07/81	22125	-	27300	-	72000	45000
12/10/81	22592	-	18165	-	63300	48624
04/06/82	19400	870	30700	16700	77200	46200
21/07/82	22100	1290	36300	17600	77200	42600
04/10/82	24300	1360	23500	18500	86700	49000

* Mean Values

Table IV (cont'd)

00BC08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Time PST	Samp. Meth.	Temp* °C	pH*	Cond* USIE/cm	NFR* mg/l	Ba µg/g
05/06/81	S271	1300	1	9.0	8.2	117	286	1140
19/07/81	S346	1459	1	12.0	8.2	93	560	-
12/10/81	S435	0925	1	5.0	7.9	160	28	-
04/06/82	S591	0955	1	8.5	7.8	114	571	964
21/07/82	S710	1343	1	10.0	8.1	109	165	978
04/10/82	S816	1008	1	5.5	7.8	88	49	977

Date D /M /Y	Cd µg/g	Cr µg/g	Cu µg/g	Mn µg/g	Ni µg/g	Pb µg/g
05/06/81	2	148	80	1150	71	20
19/07/81	-	198	990	-	<100	-
12/10/81	-	182	209	-	<100	-
04/06/82	4	113	75	1030	68	50
21/07/82	1	106	54	861	60	31
04/10/82	<2	89	113	1860	50	20

Date D /M /Y	Sn µg/g	Sr µg/g	V µg/g	Zn µg/g	Ti µg/g	Si µg/g
05/06/81	54	342	173	112	5350	198000
19/07/81	-	-	-	270	-	180000
12/10/81	-	-	-	216	-	163640
04/06/82	1	299	150	131	4250	238000
21/07/82	1	418	149	92	3630	118000
04/10/82	<9	220	205	306	3410	180000

Date D /M /Y	Mg µg/g	P µg/g	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g
05/06/81	19700	1050	26100	25400	87600	52200
19/07/81	21089	-	20297	-	77228	50495
12/10/81	12318	-	17273	-	67273	45454
04/06/82	19500	900	27700	16900	79600	47700
21/07/82	18100	1330	40500	24600	82800	38500
04/10/82	23400	1430	18400	20100	99700	56000

* Mean Values

Table V

Analysis of Clays in Composite Samples from Seven Principle Sampling Sites
July 14 - 15, 1979

Clay Mineral	Station #						
	1	2	3*	4	5	6	7
Vermiculite					+		
Montmorillonite							
Chlorite	+	+		+	+	+	+
Halloysite							
Kaolinite	+	+		+	+	+	+
Mica	+			+	+	+	+
Feldspar		+		+	+	+	+
Hornblend							
Amphibole						+	
Quartz	+			+	+	+	+
Dolomite							
Anatase						+	+
Gypsum							

July 11 - 12, 1980

	4	5	6	7
Vermiculite			T	T
Montmorillonite				
Chlorite	+	+	+	+
Halloysite			+	+
Kaolinite	+	+	+	+
Mica	+	+	+	+
Feldspar	+	+	+	+
Hornblend			+	
Amphibole			+	
Quartz	+	+	+	+
Dolomite				
Anatase			+	
Gypsum				

+ = Present
T = Trace

*Insufficient Sediment for Analysis

Table V (cont'd)
August 13 - 15, 1980

Clay Mineral	Station #				
	1	4	5	6	7
Vermiculite					
Montmorillonite					
Chlorite	+	+	+	+	+
Halloysite					
Kaolinite	+	+	+	+	+
Mica	+	+	+	+	+
Feldspar	+	+	+	+	+
Hornblend				+	+
Amphibole	+	+	+	+	+
Quartz	+	+	+	+	+
Dolomite			+	+	+
Anatase					
Gypsum					

October 8 - 10, 1980

	3	4*	5	6	7
Vermiculite	T		T		
Montmorillonite					
Chlorite	+		+	+	+
Halloysite					
Kaolinite			+	+	+
Mica	+		+	+	+
Feldspar			+		
Hornblend					
Amphibole					
Quartz	+		+	+	+
Dolomite					
Anatase					
Gypsum					

+ = Present
T = Trace

*Insufficient Sediment for Analysis

Table V (cont'd)
June 2 - 5, 1981

Clay Mineral	Station #						
	1	2	3	4	5	6	7
Vermiculite	+	T		+	+	+	+
Montmorillonite						T	T
Chlorite	+	+	+	+	+	+	+
Halloysite							
Kaolinite	+	+	+	+	+	+	+
Mica	+	+	+	+	+	+	+
Feldspar	+	+	+	+	+	+	+
Hornblend							
Amphibole	+				+	+	+
Quartz	+	+	+	+	+	+	+
Dolomite							
Anatase							
Gypsum							

July 19 - 23, 1981

	1	2	3	4	5	6	7
Vermiculite	+	+	+	+	+	+	+
Montmorillonite							
Chlorite	+	+	+	+	+	+	+
Halloysite							
Kaolinite	+	+	+	+	+	+	+
Mica	+	+	+	+	+		+
Feldspar	+	+	+	+	+	+	+
Hornblend		+					
Amphibole					+	+	+
Quartz	+	+	+	+	+	+	+
Dolomite							
Anatase							
Gypsum	+		+			+	+

+ = Present
T = Trace

Table V (cont'd)
October 12 - 15, 1981

Clay Mineral	Station #						
	1*	2*	3	4	5*	6	7
Vermiculite				T		+	+
Montmorillonite			+			+	+
Chlorite			+	+		+	+
Halloysite							
Kaolinite				+		+	+
Mica			+	+		+	+
Feldspar							
Hornblend							
Amphibole							
Quartz			+	+		+	+
Dolomite							
Anatase							
Gypsum							

May 23 - June 7, 1982

	1	2	3	4	5	6	7
Vermiculite	+	+	+	+	+	T	T
Montmorillonite	+					+	T
Chlorite	+	+	+	+	+	+	+
Halloysite							
Kaolinite	+	+	+	+	+	+	+
Mica	+	+	+	+	+	+	+
Feldspar	+	+	+	+	+	+	T
Hornblend							
Amphibole							
Quartz	+	+	+	+	+	+	+
Dolomite							
Anatase							
Gypsum							

+ = Present
T = Trace

*Insufficient Sediment for Analysis

Table V (cont'd)
July 9 - 21, 1982

Clay Mineral	Station #						
	1	2	3	4	5	6	7
Vermiculite	+			+	+	+	+
Montmorillonite							
Chlorite	+	+	+	+	+	+	+
Halloysite							
Kaolinite	+	+	+	+	+	+	+
Mica	+	+	+	+	+	+	+
Feldspar				+	+	+	+
Hornblend							
Amphibole					+	+	
Quartz	+	+	+	+	+	+	+
Dolomite							
Anatase							
Gypsum						T	

October 2 - 9, 1982

	1	2	3	4	5	6	7
Vermiculite		T	T			+	+
Montmorillonite							
Chlorite	+	+	+	+	+	+	+
Halloysite							
Kaolinite	+	+	+	+	+	+	+
Mica	+	+	+	+	+	+	+
Feldspar	+	+	+				+
Hornblend							
Amphibole							
Quartz	+	+	+	+	+	+	+
Dolomite							
Anatase							
Gypsum							

+ = Present
T = Trace

Table VI Cross Sectional Water Quality Data from Three Sampling Sites on the Lower Iskut and Stikine Rivers

00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
02/06/81	S230	1	1	1	1520	9.0	8.1
02/06/81	S231	3	2	1	1525	8.5	8.3
02/06/81	S232	1	2	1	1532	8.5	8.2
02/06/81	S233	5	3	1	1535	8.5	8.2
02/06/81	S234	3	3	1	1538	8.5	8.3
02/06/81	S235	1	3	1	1540	8.5	8.2

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
02/06/81	130	231	961	.320	12.5	1.6
02/06/81	130	215	961	.310	12.4	1.5
02/06/81	130	217	961	.275	12.2	1.0
02/06/81	122	216	961	.545	12.4	1.3
02/06/81	122	207	961	.350	12.4	2.9
02/06/81	122	213	961	.275	12.2	2.7

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S251	1	1	1	1044	9.0	8.2
05/06/81	S252	3	2	1	1050	8.0	8.3
05/06/81	S253	2	2	1	1053	8.0	8.2
05/06/81	S254	1	2	1	1055	8.0	8.1
05/06/81	S255	5	3	1	1100	9.0	8.2
05/06/81	S256	3	3	1	1102	8.0	8.2
05/06/81	S257	1	3	1	1108	8.0	8.2

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
05/06/81	138	189	926	.220	11.8	2.6
05/06/81	128	197	926	.280	12.0	2.6
05/06/81	138	190	926	.245	12.0	<.6
05/06/81	138	196	926	.250	12.0	<.6
05/06/81	138	182	926	.315	11.6	<.6
05/06/81	130	194	926	.235	11.8	<.6
05/06/81	130	275	926	.225	12.0	<.6

Table VI (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
19/07/81	S326	2	1	1	1055	12.0	8.2
19/07/81	S327	1	1	1	1100	10.0	8.2
19/07/81	S328	0	1	1	1102	10.5	8.2
19/07/81	S329	4	2	1	1110	10.5	8.1
19/07/81	S330	2	2	1	1130	11.0	8.2
19/07/81	S331	1	2	1	1132	10.5	8.4
19/07/81	S332	6	3	1	1140	12.0	8.1
19/07/81	S333	3	3	1	1142	11.0	8.2
19/07/81	S334	1	3	1	1148	11.0	8.4

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
19/07/81	120	1100	1680	1.55	10.6	7.4
19/07/81	120	850	1680	1.43	10.6	6.6
19/07/81	119	1000	1680	1.33	10.6	6.6
19/07/81	105	1000	1680	1.63	10.9	7.0
19/07/81	110	1000	1680	.884	10.6	7.4
19/07/81	110	900	1680	.904	10.6	5.8
19/07/81	108	970	1680	-	10.9	5.5
19/07/81	103	910	1680	1.45	10.6	5.8
19/07/81	105	990	1680	1.01	10.2	5.8

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/81	S362	2	1	1	1413	10.5	8.2
21/07/81	S363	1	1	1	1417	10.0	8.2
21/07/81	S364	0	1	1	1420	10.0	8.2
21/07/81	S365	4	2	1	1422	10.5	8.2
21/07/81	S366	2	2	1	1425	10.0	8.0
21/07/81	S367	1	2	1	1429	10.0	8.0
21/07/81	S368	7	3	1	1432	10.0	8.0
21/07/81	S369	4	3	1	1435	10.0	8.0
21/07/81	S370	1	3	1	1438	10.0	8.0

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/81	110	490	1340	.655	11.4	2.3
21/07/81	109	490	1340	.535	11.0	2.3
21/07/81	110	430	1340	.645	11.4	1.5
21/07/81	108	460	1340	.765	11.4	2.3
21/07/81	110	430	1340	.680	11.4	1.5
21/07/81	110	510	1340	.515	11.4	2.3
21/07/81	110	430	1340	-	11.0	2.3
21/07/81	110	430	1340	.730	11.4	1.9
21/07/81	110	410	1340	.570	11.4	1.9

Table VI (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
12/10/81	S441	3	2	1	1220	5.0	7.8
12/10/81	S442	2	2	1	1227	5.0	7.8
12/10/81	S443	1	2	1	1232	5.0	7.8
12/10/81	S444	5	3	1	1240	5.0	7.8
12/10/81	S445	3	3	1	1244	5.0	7.8
12/10/81	S446	1	3	1	1250	5.0	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
12/10/81	200	<10	236	.032	19.5	<1.0
12/10/81	200	<10	236	.038	19.1	<1.0
12/10/81	200	<10	236	.030	19.7	<1.0
12/10/81	200	<10	236	.105	19.7	<1.0
12/10/81	200	<10	236	.046	19.7	<.9
12/10/81	200	<10	236	.120	18.4	<1.0

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
14/10/81	S492	4	2	1	0940	6.0	-
14/10/81	S493	2	2	1	0944	6.0	-
14/10/81	S494	1	2	1	0946	6.0	-
14/10/81	S495	6	3	1	0955	7.0	-
14/10/81	S496	3	3	1	0957	7.0	-
14/10/81	S497	1	3	1	0959	7.0	-

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
14/10/81	192	26	356	.170	16.0	.9
14/10/81	192	21	356	.083	16.4	.9
14/10/81	192	<10	356	.063	16.2	.9
14/10/81	190	34	356	.083	16.4	.8
14/10/81	190	<10	356	.050	17.0	.9
14/10/81	190	11	356	.077	16.8	.9

Table VI (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/06/82	S555	2	1	1	1140	9.0	7.3
03/06/82	S556	1	1	1	1142	9.0	7.3
03/06/82	S557	0	1	1	1144	9.0	7.3
03/06/82	S558	3	2	1	1145	9.0	7.3
03/06/82	S559	2	2	1	1148	9.0	7.3
03/06/82	S560	1	2	1	1151	9.0	7.3
03/06/82	S561	8	3	1	1156	9.0	7.3
03/06/82	S562	4	3	1	1159	9.0	7.3
03/06/82	S563	1	3	1	1202	9.0	7.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/06/82	120	295	1030	.415	13.0	2.2
03/06/82	120	275	1030	.410	13.0	2.0
03/06/82	120	294	1030	.405	13.0	2.2
03/06/82	120	342	1030	.920	13.0	2.4
03/06/82	120	331	1030	.600	13.0	2.0
03/06/82	120	290	1030	.550	13.0	1.6
03/06/82	120	306	1030	1.13	13.0	1.8
03/06/82	120	280	1030	.705	13.0	1.4
03/06/82	120	310	1030	.505	13.0	1.1

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/06/82	S599	8	3	1	1115	8.0	8.0
04/06/82	S600	5	3	1	1120	8.0	8.0
04/06/82	S601	1	3	1	1115	8.0	8.0
04/06/82	S602	2	2	1	1130	8.0	8.0
04/06/82	S603	1	2	1	1133	8.0	8.0
04/06/82	S604	0	2	1	1136	8.0	8.0
04/06/82	S605	2	1	1	1140	8.0	8.0
04/06/82	S606	1	1	1	1140	8.0	8.0
04/06/82	S607	0	1	1	1146	8.0	8.0

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/06/82	125	261	1100	1.60	13.0	3.6
04/06/82	125	266	1100	1.68	13.0	3.8
04/06/82	125	261	1100	.500	12.0	4.3
04/06/82	125	341	1100	.715	12.0	4.5
04/06/82	125	280	1100	.700	13.0	3.6
04/06/82	125	271	1100	.463	13.0	3.6
04/06/82	125	267	1100	.470	13.0	3.4
04/06/82	125	271	1100	.580	13.0	3.4
04/06/82	125	266	1100	.500	13.0	4.1

Table VI (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
20/07/82	S655	2	1	1	1215	8.0	7.7
20/07/82	S656	1	1	1	1218	8.0	7.7
20/07/82	S657	0	1	1	1219	8.0	7.7
20/07/82	S658	2	2	1	1222	8.0	7.7
20/07/82	S659	1	2	1	1224	8.0	7.7
20/07/82	S660	0	2	1	1226	8.0	7.7
20/07/82	S661	6	3	1	1229	8.0	7.7
20/07/82	S662	3	3	1	1231	8.0	7.7
20/07/82	S663	1	3	1	1233	8.0	7.7

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
20/07/82	120	112	867	.330	12.0	<.7
20/07/82	120	167	867	.280	12.0	<.2
20/07/82	120	122	867	.290	12.0	<.4
20/07/82	120	117	867	.355	12.0	.8
20/07/82	120	125	867	.255	12.0	1.5
20/07/82	120	114	867	.265	12.0	<.7
20/07/82	120	112	867	.370	12.0	<.7
20/07/82	120	146	867	.300	12.0	<.7
20/07/82	120	129	867	.275	12.0	.8

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/82	S688	2	1	1	1030	7.0	8.1
21/07/82	S689	1	1	1	1034	7.0	8.1
21/07/82	S690	0	1	1	1035	7.0	8.1
21/07/82	S691	3	2	1	1038	7.0	8.2
21/07/82	S692	2	2	1	1040	7.0	8.2
21/07/82	S693	1	2	1	1043	7.0	8.2
21/07/82	S694	6	3	1	1045	7.0	8.2
21/07/82	S695	3	3	1	1048	7.0	8.2
21/07/82	S696	1	3	1	1052	7.0	8.2

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/82	118	141	886	.310	10.0	2.9
21/07/82	118	156	886	.305	11.0	2.8
21/07/82	118	153	886	.270	10.0	3.0
21/07/82	120	153	886	.420	11.0	2.6
21/07/82	120	139	886	.385	11.0	2.2
21/07/82	120	140	886	.290	10.0	3.7
21/07/82	119	180	886	.445	11.0	2.6
21/07/82	119	173	886	.375	11.0	3.3
21/07/82	119	131	886	.635	11.0	2.6

Table VI (cont'd) 00BC08CG0001 (#5) Iskut River below Johnson River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/10/82	S759	2	1	1	1110	5.0	7.4
03/10/82	S760	1	1	1	1114	5.0	7.4
03/10/82	S761	0	1	1	1116	5.0	7.4
03/10/82	S762	4	2	1	1118	5.0	7.4
03/10/82	S763	2	2	1	1125	5.0	7.4
03/10/82	S764	1	3	1	1132	5.0	7.4
03/10/82	S765	1	2	1	1135	5.0	7.4
03/10/82	S766	5	3	1	1128	5.0	7.4
03/10/82	S767	3	3	1	1130	5.0	7.4

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/10/82	138	46	340	.134	11.0	4.0
03/10/82	138	56	340	.136	12.0	3.5
03/10/82	138	49	340	.123	12.0	3.8
03/10/82	138	56	340	.285	12.0	3.6
03/10/82	138	50	340	.152	12.0	3.6
03/10/82	138	54	340	.140	12.0	3.4
03/10/82	138	52	340	.151	12.0	3.4
03/10/82	138	46	340	.152	12.0	3.7
03/10/82	138	45	340	.131	12.0	3.1

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/10/82	S791	2	1	1	1135	5.5	7.8
04/10/82	S792	1	1	1	1138	5.5	7.8
04/10/82	S793	0	1	1	1140	5.5	7.8
04/10/82	S794	3	2	1	1143	5.5	7.8
04/10/82	S795	2	2	1	1145	5.5	7.8
04/10/82	S796	1	2	1	1147	5.5	7.8
04/10/82	S797	5	3	1	1152	5.5	7.8
04/10/82	S798	3	3	1	1155	5.5	7.8
04/10/82	S799	1	3	1	1158	5.5	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/10/82	132	46	289	.118	13.0	3.0
04/10/82	132	49	289	.106	13.0	2.8
04/10/82	132	38	289	.111	13.0	2.8
04/10/82	140	45	289	.191	13.0	2.8
04/10/82	140	40	289	.113	16.0	3.5
04/10/82	140	45	289	.108	15.0	3.1
04/10/82	138	60	289	.109	16.0	3.2
04/10/82	138	51	289	.127	16.0	3.2
04/10/82	138	50	289	.092	16.0	3.0

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
02/06/81	S221	5	1	1	1345	8.0	8.2
02/06/81	S222	3	1	1	1348	8.0	8.2
02/06/81	S223	1	1	1	1352	8.0	8.2
02/06/81	S224	6	2	1	1400	8.0	8.2
02/06/81	S225	4	2	1	1402	8.0	8.2
02/06/81	S226	1	2	1	1405	8.0	8.1
02/06/81	S227	7	3	1	1413	8.0	8.2
02/06/81	S228	4	3	1	1416	8.0	8.3
02/06/81	S229	1	3	1	1420	8.0	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
02/06/81	90	395	4561	.510	11.3	3.5
02/06/81	90	406	4561	.505	11.1	3.0
02/06/81	90	416	4561	.430	10.9	3.2
02/06/81	90	362	4561	.510	10.9	2.8
02/06/81	90	413	4561	.545	11.1	2.2
02/06/81	90	367	4561	.425	11.1	2.4
02/06/81	95	376	4561	.515	11.4	4.9
02/06/81	90	402	4561	.465	11.2	5.5
02/06/81	95	344	4561	.390	11.2	3.9

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S258	5	1	1	0917	9.0	8.3
05/06/81	S259	3	1	1	0919	9.0	8.3
05/06/81	S260	1	1	1	0921	9.0	8.3
05/06/81	S261	6	2	1	0923	9.0	8.3
05/06/81	S262	4	2	1	0925	9.0	8.2
05/06/81	S263	1	2	1	0930	9.0	8.2
05/06/81	S264	7	3	1	0936	9.0	8.3
05/06/81	S265	4	3	1	0940	9.0	8.3
05/06/81	S266	1	3	1	0945	9.0	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
05/06/81	110	373	3661	.605	11.6	2.8
05/06/81	105	337	3661	.450	11.8	2.8
05/06/81	110	351	3661	.450	11.8	2.6
05/06/81	110	363	3661	.480	12.2	1.9
05/06/81	110	393	3661	.365	11.6	1.8
05/06/81	110	379	3661	.395	11.6	1.8
05/06/81	110	311	3661	.330	11.1	4.3
05/06/81	110	319	3661	.350	11.1	2.7
05/06/81	110	301	3661	.315	11.1	2.3

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
19/07/81	S335	8	1	1	1223	13.0	8.1
19/07/81	S336	4	1	1	1230	12.5	8.1
19/07/81	S337	1	1	1	1232	12.0	8.2
19/07/81	S338	8	2	1	1238	12.0	8.2
19/07/81	S339	4	2	1	1244	12.0	8.2
19/07/81	S340	1	2	1	1245	12.0	8.1
19/07/81	S341	7	3	1	1255	12.0	8.2
19/07/81	S342	4	3	1	1300	12.0	8.2
19/07/81	S343	1	3	1	1303	12.0	8.2

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
19/07/81	95	510	3530	.705	11.3	4.7
19/07/81	95	490	3530	.705	10.9	4.3
19/07/81	96	570	3530	.770	10.2	5.0
19/07/81	95	560	3530	.955	12.1	7.8
19/07/81	95	530	3530	-	10.9	2.7
19/07/81	95	510	3530	.670	11.3	2.7
19/07/81	95	520	3530	.585	11.3	3.5
19/07/81	95	530	3530	.720	11.3	3.1
19/07/81	95	490	3530	.695	10.9	4.3

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/81	S371	6	1	1	1520	12.0	8.3
21/07/81	S372	3	1	1	1524	12.0	8.3
21/07/81	S373	1	1	1	1527	12.0	8.3
21/07/81	S374	7	2	1	1532	12.0	8.2
21/07/81	S375	4	2	1	1535	12.0	8.2
21/07/81	S376	1	2	1	1538	12.0	8.2
21/07/81	S377	9	3	1	1540	12.0	8.3
21/07/81	S378	5	3	1	1644	12.0	8.3
21/07/81	S379	1	3	1	1645	12.0	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/81	100	330	3417	.625	11.0	3.1
21/07/81	100	310	3417	.370	11.0	1.9
21/07/81	100	310	3417	.430	11.4	1.1
21/07/81	100	420	3417	.480	11.0	1.9
21/07/81	100	300	3417	.365	11.0	2.7
21/07/81	100	330	3417	.395	11.4	2.3
21/07/81	100	330	3417	.470	11.4	2.3
21/07/81	100	310	3417	.765	11.0	2.7
21/07/81	100	280	3417	.370	11.4	2.7

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
12/10/81	S448	3	1	1	1400	5.0	7.8
12/10/81	S449	2	1	1	1410	5.0	7.8
12/10/81	S450	1	1	1	1412	5.0	7.8
12/10/81	S451	3	2	1	1415	5.0	7.8
12/10/81	S452	2	2	1	1417	5.0	7.8
12/10/81	S453	1	2	1	1420	5.0	7.8
12/10/81	S454	5	3	1	1422	5.0	7.8
12/10/81	S455	3	3	1	1424	5.0	7.8
12/10/81	S456	1	3	1	1426	5.0	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
12/10/81	160	57	531	.124	17.7	1.6
12/10/81	160	50	531	.156	18.0	1.5
12/10/81	160	<10	531	.094	18.0	1.1
12/10/81	162	43	531	.174	18.2	<1.0
12/10/81	160	73	531	.134	18.0	1.3
12/10/81	160	110	531	.200	18.0	1.5
12/10/81	160	51	531	.100	18.2	1.3
12/10/81	160	65	531	-	18.2	<1.0
12/10/81	160	24	531	.128	18.2	<1.0

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
14/10/81	S501	3	1	1	1100	7.0	-
14/10/81	S502	2	1	1	1103	6.0	-
14/10/81	S503	1	1	1	1104	6.0	-
14/10/81	S504	3	2	1	1108	5.0	-
14/10/81	S505	2	2	1	1110	6.5	-
14/10/81	S506	1	2	1	1112	6.5	-
14/10/81	S507	6	3	1	1115	6.5	-
14/10/81	S508	3	3	1	1120	6.5	-
14/10/81	S509	1	3	1	1122	6.5	-

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
14/10/81	163	150	593	.185	17.3	2.1
14/10/81	162	39	593	.156	17.6	1.2
14/10/81	160	53	593	.137	17.6	<1.0
14/10/81	162	<10	593	.225	17.5	1.4
14/10/81	162	120	593	.154	17.5	<.9
14/10/81	162	130	593	.160	17.3	1.0
14/10/81	162	61	593	.186	17.3	1.4
14/10/81	162	110	593	-	17.6	1.2
14/10/81	162	77	593	.142	17.6	<1.0

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/06/82	S564	7	3	1	1255	8.5	7.9
03/06/82	S565	4	3	1	1258	8.5	7.9
03/06/82	S566	1	3	1	1301	8.5	7.9
03/06/82	S567	7	2	1	1304	8.5	7.9
03/06/82	S568	4	2	1	1307	8.5	7.9
03/06/82	S569	1	2	1	1310	8.5	7.9
03/06/82	S570	8	1	1	1312	8.5	7.9
03/06/82	S571	4	1	1	1315	8.5	7.9
03/06/82	S572	1	1	1	1318	8.5	7.9

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/06/82	100	759	2736	.935	12.0	6.0
03/06/82	100	745	2736	1.03	12.0	6.2
03/06/82	100	890	2736	.865	12.0	6.0
03/06/82	100	714	2736	1.25	12.0	6.8
03/06/82	100	703	2736	1.08	11.0	6.4
03/06/82	100	627	2736	.940	12.0	5.6
03/06/82	100	733	2736	.910	12.0	6.2
03/06/82	100	745	2736	.895	11.0	5.8
03/06/82	100	580	2736	.830	11.0	6.6

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/06/82	S610	8	3	1	1215	8.0	8.1
04/06/82	S611	5	3	1	1218	8.0	8.1
04/06/82	S612	1	3	1	1221	8.0	8.1
04/06/82	S613	6	2	1	1225	8.0	8.1
04/06/82	S614	3	2	1	1230	8.0	8.1
04/06/82	S615	1	2	1	1235	8.0	8.1
04/06/82	S616	6	1	1	1240	8.0	8.1
04/06/82	S617	3	1	1	1243	8.0	8.1
04/06/82	S618	1	1	1	1246	8.0	8.1

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/06/82	95	585	2921	.940	12.0	8.2
04/06/82	95	586	2921	.925	12.0	8.2
04/06/82	95	643	2921	.880	12.0	8.2
04/06/82	90	763	2921	.995	11.0	8.4
04/06/82	90	700	2921	.930	11.0	8.4
04/06/82	90	735	2921	.850	11.0	8.2
04/06/82	90	750	2921	.920	11.0	8.8
04/06/82	90	657	2921	-	11.0	10.0
04/06/82	90	702	2921	.880	11.0	9.0

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
20/07/82	S664	5	1	1	1346	9.5	7.8
20/07/82	S665	3	1	1	1348	9.5	7.8
20/07/82	S666	1	1	1	1350	9.5	7.8
20/07/82	S667	6	2	1	1353	9.5	7.8
20/07/82	S668	4	2	1	1356	9.5	7.8
20/07/82	S669	1	2	1	1358	9.5	7.8
20/07/82	S670	5	3	1	1402	9.5	7.8
20/07/82	S671	3	3	1	1404	9.5	7.8
20/07/82	S672	1	3	1	1406	9.5	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
20/07/82	130	162	2163	.400	12.0	1.1
20/07/82	130	-	2163	.310	13.0	2.0
20/07/82	130	119	2163	.275	13.0	2.2
20/07/82	130	109	2163	.405	11.0	3.1
20/07/82	130	139	2163	.390	11.0	3.1
20/07/82	130	105	2163	.245	11.0	2.7
20/07/82	130	99	2163	.245	12.0	2.0
20/07/82	130	121	2163	.210	11.0	2.3
20/07/82	130	106	2163	.220	11.0	3.1

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/82	S699	5	1	1	1150	9.0	8.2
21/07/82	S700	3	1	1	1153	9.0	8.2
21/07/82	S701	1	1	1	1158	9.0	8.2
21/07/82	S702	6	2	1	1202	9.0	8.2
21/07/82	S703	3	2	1	1205	9.0	8.2
21/07/82	S704	1	2	1	1208	9.0	8.2
21/07/82	S705	8	3	1	1210	9.0	8.2
21/07/82	S706	4	3	1	1212	9.0	8.2
21/07/82	S707	1	3	1	1215	9.0	8.2

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/82	110	156	2031	.745	11.0	4.1
21/07/82	110	163	2031	.305	11.0	3.5
21/07/82	110	155	2031	.240	11.0	3.5
21/07/82	105	152	2031	.240	11.0	4.1
21/07/82	105	150	2031	.260	11.0	2.4
21/07/82	105	123	2031	.215	11.0	4.1
21/07/82	105	138	2031	.245	11.0	4.7
21/07/82	105	121	2031	.220	12.0	3.3
21/07/82	105	132	2031	.210	11.0	3.1

Table VI (cont'd) 00BC08CF0002 (#6) Stikine River above Choquette River

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/10/82	S768	2	1	1	1230	6.0	7.6
03/10/82	S769	1	1	1	1232	6.0	7.6
03/10/82	S770	0	1	1	1234	6.0	7.6
03/10/82	S771	3	2	1	1240	6.0	7.6
03/10/82	S772	2	2	1	1242	6.0	7.6
03/10/82	S773	1	2	1	1243	6.0	7.6
03/10/82	S774	5	3	1	1245	6.0	7.6
03/10/82	S775	3	3	1	1247	6.0	7.6
03/10/82	S776	1	3	1	1250	6.0	7.6

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/10/82	108	55	1104	.178	12.0	4.1
03/10/82	108	52	1104	.141	12.0	3.4
03/10/82	108	54	1104	.173	12.0	3.4
03/10/82	108	49	1104	.153	12.0	3.7
03/10/82	108	49	1104	.139	12.0	3.9
03/10/82	108	48	1104	.126	12.0	3.4
03/10/82	108	54	1104	.122	12.0	3.6
03/10/82	108	56	1104	.123	12.0	3.2
03/10/82	108	51	1104	.109	12.0	3.7

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/10/82	S800	4	1	1	1300	6.0	7.8
04/10/82	S801	2	1	1	1305	6.0	7.8
04/10/82	S802	1	1	1	1307	6.0	7.8
04/10/82	S803	4	2	1	1310	6.0	7.7
04/10/82	S804	2	2	1	1312	6.0	7.7
04/10/82	S805	1	2	1	1314	6.0	7.7
04/10/82	S806	5	3	1	1317	6.0	7.8
04/10/82	S807	3	3	1	1320	6.0	7.8
04/10/82	S808	1	3	1	1323	6.0	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/10/82	120	56	960	.172	12.0	3.3
04/10/82	120	56	960	.125	12.0	3.1
04/10/82	120	62	960	.110	12.0	3.3
04/10/82	120	46	960	.141	12.0	3.3
04/10/82	120	48	960	.114	12.0	3.1
04/10/82	120	49	960	.132	12.0	3.3
04/10/82	120	28	960	.142	12.0	3.5
04/10/82	120	33	960	.112	12.0	3.6
04/10/82	120	40	960	.114	12.0	2.9

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
02/06/81	S212	7	1	1	1125	8.0	8.2
02/06/81	S213	4	1	1	1129	8.0	8.2
02/06/81	S214	1	1	1	1132	8.0	8.2
02/06/81	S215	6	2	1	1140	8.0	8.3
02/06/81	S216	3	2	1	1145	8.0	8.3
02/06/81	S217	1	2	1	1148	8.0	8.4
02/06/81	S218	4	3	1	1155	8.0	8.4
02/06/81	S219	3	3	1	1158	8.0	8.3
02/06/81	S220	1	3	1	1200	8.0	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
02/06/81	100	357	5522	.735	10.3	5.1
02/06/81	90	362	5522	.445	10.7	4.3
02/06/81	90	265	5522	.420	10.9	3.7
02/06/81	95	355	5522	.555	10.9	4.1
02/06/81	90	328	5522	.455	10.9	2.8
02/06/81	90	384	5522	.465	10.7	3.2
02/06/81	90	349	5522	.405	10.9	2.8
02/06/81	90	328	5522	.495	11.1	2.8
02/06/81	95	327	5522	.400	10.9	2.2

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
05/06/81	S267	7	1	1	1245	9.0	8.2
05/06/81	S268	4	1	1	1250	9.0	8.2
05/06/81	S269	1	1	1	1252	9.0	7.8
05/06/81	S270	6	2	1	1255	9.0	8.3
05/06/81	S271	4	2	1	1300	9.0	8.2
05/06/81	S272	1	2	1	1305	9.0	8.2
05/06/81	S273	6	3	1	1310	10.5	8.2
05/06/81	S274	3	3	1	1315	9.5	8.2
05/06/81	S275	1	3	1	1318	9.5	8.1

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
05/06/81	110	315	4587	.425	10.4	1.8
05/06/81	110	275	4587	-	10.4	1.8
05/06/81	117	311	4587	.365	10.8	2.2
05/06/81	120	278	4587	.480	10.8	3.0
05/06/81	120	294	4587	.365	11.2	1.5
05/06/81	120	268	4587	.370	11.0	1.0
05/06/81	120	277	4587	.320	10.8	.7
05/06/81	118	246	4587	.275	10.6	1.9
05/06/81	120	249	4587	.325	10.4	2.4

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
19/07/81	S344	9	1	1	1452	12.0	8.2
19/07/81	S345	5	1	1	1455	12.0	8.1
19/07/81	S346	1	1	1	1459	12.0	8.2
19/07/81	S347	7	2	1	1515	12.0	8.3
19/07/81	S348	4	2	1	1520	11.5	8.1
19/07/81	S349	1	2	1	1525	11.5	8.2
19/07/81	S350	5	3	1	1530	12.0	8.1
19/07/81	S351	3	3	1	1533	11.5	8.1
19/07/81	S352	1	3	1	1538	11.5	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
19/07/81	90	570	5210	.765	10.6	3.5
19/07/81	90	550	5210	.790	10.6	3.1
19/07/81	90	280	5210	.765	10.2	4.3
19/07/81	93	730	5210	1.64	12.5	4.3
19/07/81	93	620	5210	.720	11.3	7.4
19/07/81	93	660	5210	.935	12.1	5.1
19/07/81	94	590	5210	.715	10.2	5.0
19/07/81	95	670	5210	.735	11.3	3.9
19/07/81	94	590	5210	.800	10.9	4.8

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/81	S380	8	1	1	1200	11.5	8.3
21/07/81	S381	4	1	1	1205	11.5	8.2
21/07/81	S382	1	1	1	1209	11.5	8.2
21/07/81	S383	7	2	1	1210	11.5	8.2
21/07/81	S384	4	2	1	1215	11.5	8.2
21/07/81	S385	1	2	1	1217	11.5	8.2
21/07/81	S386	5	3	1	1220	11.5	8.2
21/07/81	S387	3	3	1	1225	11.5	8.2
21/07/81	S388	1	3	1	1227	11.5	8.3

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/81	99	400	4757	.600	11.0	2.3
21/07/81	99	390	4757	-	10.2	3.5
21/07/81	99	430	4757	.590	10.6	2.3
21/07/81	99	400	4757	.790	10.6	2.3
21/07/81	100	420	4757	.555	11.4	2.7
21/07/81	100	480	4757	.520	10.2	2.7
21/07/81	100	440	4757	.580	10.2	3.1
21/07/81	100	380	4757	-	10.2	2.7
21/07/81	100	370	4757	.500	10.2	2.7

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
12/10/81	S430	4	1	1	0900	5.0	7.8
12/10/81	S431	2	1	1	0910	5.0	7.8
12/10/81	S432	1	1	1	0912	5.0	7.8
12/10/81	S433	3	2	1	0917	5.0	7.8
12/10/81	S434	2	2	1	0920	5.0	7.8
12/10/81	S435	1	2	1	0925	5.0	7.7
12/10/81	S436	2	3	1	0933	5.0	7.8
12/10/81	S437	1	3	1	0935	5.0	7.9
12/10/81	S438	0	3	1	0940	5.0	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
12/10/81	160	27	767	.110	17.2	1.5
12/10/81	160	17	767	-	17.6	<.9
12/10/81	160	21	767	.067	17.8	<.9
12/10/81	160	21	767	.118	18.3	<.9
12/10/81	160	31	767	.081	17.9	<.9
12/10/81	160	27	767	.088	18.1	<.9
12/10/81	160	21	767	-	18.3	<.9
12/10/81	160	19	767	.058	18.1	<.9
12/10/81	160	24	767	.072	17.6	<.9

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
14/10/81	S483	5	1	1	0740	5.5	-
14/10/81	S484	3	1	1	0742	6.0	-
14/10/81	S485	1	1	1	0745	6.0	-
14/10/81	S486	4	2	1	0757	6.0	-
14/10/81	S487	2	2	1	0800	6.0	-
14/10/81	S488	1	2	1	0803	6.0	-
14/10/81	S489	2	3	1	0807	6.0	-
14/10/81	S490	1	3	1	0808	6.0	-
14/10/81	S491	0	3	1	0810	6.0	-

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
14/10/81	170	<10	949	.142	15.6	1.5
14/10/81	165	64	949	.153	16.8	<.9
14/10/81	165	17	949	.112	16.2	1.0
14/10/81	177	38	949	.179	17.5	<.9
14/10/81	177	21	949	.131	17.0	<.9
14/10/81	177	59	949	.108	17.1	<.9
14/10/81	177	36	949	.103	17.1	<.9
14/10/81	177	35	949	.140	17.1	<.9
14/10/81	177	48	949	.061	17.1	<.9

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/06/82	S573	7	1	1	1500	8.5	7.9
03/06/82	S574	4	1	1	1503	8.5	7.9
03/06/82	S575	1	1	1	1506	8.5	7.9
03/06/82	S576	6	2	1	1510	8.5	7.9
03/06/82	S577	4	2	1	1514	8.5	7.9
03/06/82	S578	1	2	1	1517	8.5	7.9
03/06/82	S579	5	3	1	1520	8.5	7.9
03/06/82	S580	3	3	1	1523	8.5	7.9
03/06/82	S581	1	3	1	1526	8.5	7.9

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/06/82	-	425	3766	1.35	12.0	4.5
03/06/82	-	412	3766	.930	11.0	4.3
03/06/82	-	521	3766	.895	11.0	5.0
03/06/82	-	548	3766	1.60	12.0	4.7
03/06/82	-	513	3766	1.13	12.0	4.7
03/06/82	-	605	3766	.920	12.0	5.0
03/06/82	-	529	3766	1.10	12.0	4.8
03/06/82	-	518	3766	.810	12.0	4.3
03/06/82	-	411	3766	.825	12.0	5.0

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/06/82	S588	5	3	1	0945	8.5	7.8
04/06/82	S589	3	3	1	0948	8.5	7.8
04/06/82	S590	1	3	1	0951	8.5	7.8
04/06/82	S591	6	2	1	0955	8.5	7.8
04/06/82	S592	3	2	1	1000	8.5	7.8
04/06/82	S593	1	2	1	1005	8.5	7.8
04/06/82	S594	6	1	1	1010	8.5	7.8
04/06/82	S595	3	1	1	1013	8.5	7.8
04/06/82	S596	1	1	1	1016	8.5	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/06/82	100	556	4021	1.03	12.0	4.5
04/06/82	100	548	4021	.883	11.0	4.7
04/06/82	100	485	4021	.670	12.0	4.5
04/06/82	100	602	4021	1.45	12.0	4.7
04/06/82	100	494	4021	.870	11.0	6.9
04/06/82	100	505	4021	.690	12.0	6.7
04/06/82	100	559	4021	.975	12.0	7.6
04/06/82	100	625	4021	.695	12.0	7.1
04/06/82	100	582	4021	.880	12.0	7.3

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
20/07/82	S673	7	1	1	1030	9.0	7.8
20/07/82	S674	4	1	1	1033	9.0	7.8
20/07/82	S675	1	1	1	1035	9.0	7.8
20/07/82	S676	6	2	1	1041	9.0	7.8
20/07/82	S677	4	2	1	1043	9.0	7.8
20/07/82	S678	1	2	1	1046	9.0	7.8
20/07/82	S679	4	3	1	1048	9.0	7.8
20/07/82	S680	2	3	1	1050	9.0	7.8
20/07/82	S681	1	3	1	1052	9.0	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
20/07/82	100	99	3030	.210	10.0	2.5
20/07/82	100	111	3030	.260	10.0	2.5
20/07/82	100	175	3030	.300	9.8	2.5
20/07/82	100	163	3030	.440	10.0	2.9
20/07/82	100	121	3030	.260	9.8	3.4
20/07/82	100	119	3030	.245	9.8	2.9
20/07/82	100	112	3030	.215	9.8	2.7
20/07/82	100	119	3030	.195	9.8	2.7
20/07/82	100	103	3030	.182	9.8	4.8

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
21/07/82	S710	7	1	1	1348	10.0	8.1
21/07/82	S711	4	1	1	1350	10.0	8.1
21/07/82	S712	1	1	1	1352	10.0	8.1
21/07/82	S713	6	2	1	1356	10.0	8.1
21/07/82	S714	3	2	1	1359	10.0	8.1
21/07/82	S715	1	2	1	1402	10.0	8.1
21/07/82	S716	5	3	1	1406	10.0	8.1
21/07/82	S717	3	3	1	1408	10.0	8.1
21/07/82	S718	1	3	1	1410	10.0	8.1

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
21/07/82	108	127	2917	.210	9.7	3.4
21/07/82	108	134	2917	.215	10.0	2.4
21/07/82	108	146	2917	.215	10.0	3.4
21/07/82	110	360	2917	.460	10.0	3.2
21/07/82	110	227	2917	.310	11.0	3.3
21/07/82	110	176	2917	.290	11.0	3.3
21/07/82	108	172	2917	.275	9.9	4.1
21/07/82	108	137	2917	.245	10.0	3.2
21/07/82	108	132	2917	.205	10.0	3.4

Table VI (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
03/10/82	S777	5	1	1	1350	6.0	7.6
03/10/82	S778	3	1	1	1352	6.0	7.6
03/10/82	S779	1	1	1	1355	6.0	7.6
03/10/82	S780	3	2	1	1358	6.0	7.6
03/10/82	S781	2	2	1	1400	6.0	7.6
03/10/82	S782	1	2	1	1402	6.0	7.6
03/10/82	S783	2	3	1	1404	6.0	7.6
03/10/82	S784	1	3	1	1408	6.0	7.6
03/10/82	S785	0	3	1	1410	6.0	7.6

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
03/10/82	108	47	1444	.180	9.5	3.7
03/10/82	108	53	1444	.158	9.8	3.1
03/10/82	108	67	1444	.156	10.0	3.2
03/10/82	108	85	1444	.230	11.0	3.4
03/10/82	108	70	1444	.176	11.0	3.5
03/10/82	108	62	1444	.152	11.0	3.9
03/10/82	108	70	1444	.172	11.0	3.7
03/10/82	108	71	1444	.154	11.0	3.3
03/10/82	108	57	1444	.148	11.0	2.9

Date D /M /Y	Sample Number	Depth m	Dist. Bank	Samp. Meth.	Time PST	Temp °C	pH
04/10/82	S809	4	1	1	0941	5.5	7.8
04/10/82	S810	3	1	1	0947	5.0	7.8
04/10/82	S811	1	1	1	0948	5.0	7.8
04/10/82	S812	4	2	1	0950	5.5	7.7
04/10/82	S813	2	2	1	0955	5.5	7.7
04/10/82	S814	1	2	1	1000	5.5	7.7
04/10/82	S815	2	3	1	1005	5.5	7.8
04/10/82	S816	1	3	1	1008	5.5	7.8
04/10/82	S817	0	3	1	1010	5.5	7.8

Date D /M /Y	Cond USIE/cm	NFR mg/l	Discharge m^3/s	P mg/l	TIC mg/l	TOC mg/l
04/10/82	80	35	1249	.180	9.7	3.1
04/10/82	80	47	1249	.107	10.0	2.9
04/10/82	80	36	1249	.124	10.0	3.0
04/10/82	85	43	1249	.169	11.0	3.4
04/10/82	85	41	1249	.114	11.0	3.2
04/10/82	85	56	1249	.108	11.0	2.9
04/10/82	100	50	1249	.116	11.0	2.8
04/10/82	100	56	1249	.098	11.0	3.0
04/10/82	100	52	1249	.105	11.0	3.0
04/10/82	100	52	1249	.105	11.0	3.0

Table VII Water Quality Data from Selected Tributaries

Tributary A - Unnamed

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S465	.003	5.5	.8	.85	<.2	.4	.2
05/06/82	S621	.004	3.0	1.0	.10	.2	.3	.3
22/07/82	S726	.005	4.0	.8	.48	<.2	.3	<.2
05/10/82	S826	.007	2.0	.5	.20	<.2	.3	.3

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	1.6	.7	<10	.35	.140	.028	.6	2.2
05/06/82	1.3	<.5	13	1.80	.072	.049	.3	1.9
22/07/82	.8	<.5	121	.70	.014	.024	<.5	1.3
05/10/82	1.9	<.2	<10	.45	.055	.019	<.5	2.3

Tributary B - Goat Creek

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S466	.064	11.9	2.4	1.4	.4	7.8	10.7
05/06/82	S622	.006	3.2	1.0	.10	<.2	.3	.4
22/07/82	S725	.006	4.0	.8	.48	.3	.7	.7
05/10/82	S824	.113	22.6	7.3	1.1	.4	2.2	2.8

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	2.2	2.1	<10	3.60	.215	.048	1.5	1.3
05/06/82	1.5	<.5	<10	6.20	.111	.080	.5	1.7
22/07/82	1.2	.6	13	1.10	.032	.016	<.5	1.8
05/10/82	2.9	1.4	81	5.70	.132	.041	4.8	3.9

Table VII (cont'd)

Tributary C - Unnamed

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S467	.011	11.9	2.4	1.4	.4	.5	.2
05/06/82	S623	.005	5.0	1.6	.20	.3	.3	.4
22/07/82	S724	.021	5.0	1.2	.50	.3	.2	.2
05/10/82	S829	.142	5.4	1.4	.50	.9	.5	.7

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	2.6	1.6	<10	.30	.045	.044	1.0	.8
05/06/82	2.0	1.2	<10	3.70	.089	.066	.5	1.7
22/07/82	1.5	1.1	35	5.10	.053	.006	<.5	1.6
05/10/82	2.8	1.9	71	39.0	.096	.037	.2	3.6

Tributary D - Shuktusa Branch

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S468	.004	13.5	3.1	1.4	.3	.5	.3
05/06/82	S624	.002	5.6	1.8	.30	.2	.3	.3
22/07/82	S723	-	6.0	2.0	.24	<.2	.2	.2
05/10/82	S827	.029	5.6	1.0	.80	.2	.4	.4

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	3.0	1.3	<10	.17	.130	.114	1.7	.7
05/06/82	2.1	.7	<10	3.90	.149	.133	1.0	1.2
22/07/82	1.8	.9	20	.12	.041	.025	.2	1.6
05/10/82	2.6	.6	<10	.18	.215	.135	.2	3.2

Table VII (Cont'd)

Tributary E - River draining Shakes Glacier

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S470	.032	11.9	1.6	1.9	.6	1.2	1.7
05/06/82	S625	.037	6.2	2.0	.30	.7	.5	.8
22/07/82	S722	.050	7.0	2.4	.24	.4	.8	.5
05/10/82	S825	.048	4.8	1.4	.30	.7	.6	.8

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	1.4	1.3	<10	14.0	.040	.032	1.3	<.5
05/06/82	1.3	1.7	<10	20.0	.082	.049	1.0	1.2
22/07/82	1.3	2.3	27	40.5	.070	.032	<.5	2.4
05/10/82	1.2	1.7	16	38.0	.067	.030	.2	1.3

Tributary F - Dry Wash

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
13/10/81	S469	.007	41.7	11.8	3.0	1.0	1.3	.6
05/06/82	S626	.009	11.6	3.6	.60	.3	.5	.4
22/07/82	S721	.018	31.1	8.3	2.5	.7	.9	.7
05/10/82	S828	.053	25.8	7.7	1.6	1.0	.8	1.0

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
13/10/81	12.0	1.6	15	8.60	.095	.032	13.2	1.2
05/06/82	3.7	1.5	<10	7.8	.123	.008	5.2	4.2
22/07/82	8.7	3.5	27	17.5	.226	.019	14.0	2.6
05/10/82	7.8	3.2	14	2.80	.178	.012	7.7	5.2

Table VII (Cont'd)

Tributary G - Caralin Creek

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
14/10/81	S471	.003	25.8	7.9	1.5	.4	.5	.2
03/06/82	S583	.006	13.0	4.7	.30	.2	.2	<.2
20/07/82	S683	.003	17.1	5.6	.80	.2	.3	<.2
03/10/82	S788	.003	22.6	7.8	.70	.5	.5	.3

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
14/10/81	2.6	2.9	<10	.10	.030	.028	4.9	<.5
03/06/82	2.1	1.0	<10	3.80	.174	.127	3.2	<.5
20/07/82	2.0	2.1	<10	.60	.024	.005	3.0	2.0
03/10/82	2.8	2.3	<10	.30	.076	.049	4.9	2.2

Tributary H - Johnson River

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
14/10/81	S472	.025	49.2	16.5	1.9	.6	.8	.3
03/06/82	S582	.179	40.2	14.6	.90	.6	.7	.6
20/07/82	S682	.065	27.1	9.6	.80	.2	.2	.2
03/10/82	S787	.074	34.5	12.0	1.1	.6	.5	.4

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
14/10/81	2.9	8.0	<10	5.40	.065	.065	9.9	<.5
03/06/82	2.4	8.3	71	56.0	.204	.140	8.6	.7
20/07/82	1.5	4.3	35	23.0	.030	.017	4.2	2.1
03/10/82	2.1	5.2	34	19.0	.161	.053	7.5	1.9

Table VII (Cont'd)

Tributary I - Choquette River

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
21/07/81	S391	.082	21.0	7.2	.70	.2	.2	<2
14/10/81	S473	.016	39.7	12.6	2.0	.2	.5	.2
03/06/82	S584	.083	29.0	10.5	.70	.2	.4	.4
20/07/82	S684	.038	21.9	8.0	.50	<.2	.2	.6
03/10/82	S789	.107	31.7	11.8	.50	.4	.4	.5

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
21/07/81	1.1	3.8	25	-	-	-	4.1	<.5
14/10/81	1.9	9.1	<10	1.20	.030	.027	6.5	<.5
03/06/82	2.2	4.4	22	52.0	.187	.122	6.0	<.5
20/07/82	1.2	3.5	19	20.0	.020	.002	3.8	2.0
03/10/82	1.6	5.3	26	70.5	.052	.032	5.8	2.4

Tributary J - River draining Great Glacier

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
21/07/81	S390	.102	4.8	1.3	.40	1.2	.8	.8
14/10/81	S474	-	6.0	.8	.96	.7	.8	.7
03/06/82	S585	.065	4.6	1.2	.40	.7	.6	.8
20/07/82	S685	.085	5.0	1.2	.50	.7	.6	.7
03/10/82	S786	.124	3.6	.8	.40	1.2	.8	1.0

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
21/07/81	1.4	1.2	77	-	-	-	.8	.8
14/10/81	1.1	<.5	<10	25.0	.035	.026	.8	1.0
03/06/82	1.3	.6	17	69.0	.139	.043	.8	<.5
20/07/82	1.2	.8	37	74.5	.035	.022	.4	1.8
03/10/82	1.2	.8	31	85.0	.051	.029	.4	1.1

Table VII (Cont'd)

Tributary K - unnamed

Date D /M /Y	Sample Number	Total P mg/l	Hard mg/l	Ca mg/l	Mg mg/l	K mg/l	Na mg/l	Cl mg/l
14/10/81	S475	.006	31.8	11.0	1.1	.8	.8	.2
03/06/82	S586	.005	17.8	6.6	.30	.7	.5	.2
20/07/82	S686	.060	23.5	9.2	.10	.8	.6	<.2
03/10/82	S790	.023	27.1	10.5	.20	.7	.6	.3

Date D /M /Y	Si mg/l	SO_4 mg/l	NFR mg/l	Turbidity J.T.U.	Total N mg/l-D	NO_2/NO_3 mg/l-D	TIC mg/l	TOC mg/l
14/10/81	4.4	2.1	<10	1.50	.350	.340	6.9	.8
03/06/82	1.3	1.1	<10	2.20	.547	.465	4.3	.5
20/07/82	3.7	1.8	<10	.50	.242	.200	4.6	2.4
03/10/82	4.1	2.2	<10	.30	.437	.318	6.0	2.4

Table VIII Water Quality Data from the Ketili River

Station 1

Date D /M /Y	Sample Number	Dist. Bank	Samp. Meth.	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
04/06/81	S243	2	3	.196	-	-
04/06/81	S244	1	3	.061	-	-
20/07/81	S355	1	3	.002	-	-
05/06/82	S627	1	3	.066	.240	.091
22/07/82	S727	1	3	.020	.052	.024
05/10/82	S820	1	3	.048	.085	.050

Date D /M /Y	Total P mg/l	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
04/06/81	.275	10.7	5.0	9.0	1.85	.105
04/06/81	.320	11.0	3.3	9.0	1.44	<.100
20/07/81	.955	10.2	3.1	8.4	2.40	<.167
05/06/82	.740	11.0	7.5	11.0	3.09	.323
22/07/82	.171	9.2	3.5	11.0	.781	<.167
05/10/82	.046	13.0	2.8	11.0	.135	<.125

Date D /M /Y	$Cells^5/ml$ (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
04/06/81	24.0	12.9	.7	-	11	.1
04/06/81	9.3	5.2	.7	26	11	.2
20/07/81	9.3	5.7	.8	20	32	.3
05/06/82	9.0	7.3	1.0	31	382	4.8
22/07/82	3.4	2.4	.9	33	27	.5
05/10/82	2.3	1.4	.8	18	21	.3

Table VIII (cont'd) Ketili River - Station 2

Date D /M /Y	Sample Number	Dist. Bank	Samp. Meth.	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
04/06/81	S245	2	3	.058	-	-
04/06/81	S246	3	3	.050	-	-
20/07/81	S356	1	3	.027	-	-
05/06/82	S628	1	3	.078	.240	.091
22/07/82	S728	1	3	.023	.045	.024
05/10/82	S821	1	3	.056	.156	.052

Date D /M /Y	Total P mg/l	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
04/06/81	.310	11.0	2.4	9.0	2.19	.143
04/06/81	.305	10.6	2.3	10.0	1.76	.110
20/07/81	1.730	10.6	4.0	7.4	2.68	<.167
05/06/82	.725	11.0	7.3	11.0	7.85	1.06
22/07/82	.195	10.0	3.1	11.0	.821	<.167
05/10/82	.072	7.9	4.4	7.7	.369	<.125

Date D /M /Y	$Cells^5/ml$ (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
04/06/81	5.4	3.0	.7	20	16	.4
04/06/81	9.2	5.4	.8	19	19	.3
20/07/81	8.5	5.1	.8	21	106	.6
05/06/82	8.2	6.7	1.1	31	191	2.5
22/07/82	3.3	2.1	.8	27	5	<.1
05/10/82	4.5	2.7	.8	20	64	1.2

Table VIII (cont'd) Ketili River - Station 3

Date D /M /Y	Sample Number	Dist. Bank	Samp. Meth.	NO_2/NO_3 mg/l-F	Total N mg/l-D	NO_2/NO_3 mg/l-D
04/06/81	S247	2	3	.037	-	-
04/06/81	S248	3	3	.030	-	-
20/07/81	S357	1	3	.028	-	-
13/10/81	S463	3	3	.099	.230	.100
05/06/82	S629	3	3	.067	.294	.092
22/07/82	S729	3	3	.020	.055	.026

Date D /M /Y	Total P mg/l	TIC mg/l	TOC mg/l	DIC mg/l	POC mg/l	PON mg/l
04/06/81	.410	10.4	2.7	10.0	2.07	.131
04/06/81	.430	10.4	2.3	10.0	2.71	.116
20/07/81	1.57	10.9	2.7	8.1	2.66	<.167
13/10/81	-	11.5	1.2	11.3	<.167	<.167
05/06/82	.800	11.0	7.3	11.0	3.88	.539
22/07/82	.210	9.4	3.5	9.7	1.15	<.167

Date D /M /Y	$Cells^5/ml$ (Bact)	mg C/m^3 (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells/ml (Phyt)	mg C/m^3 (Phyt)
04/06/81	10.0	5.6	.7	24	16	.5
04/06/81	3.2	6.0	.7	19	45	.4
20/07/81	11.0	6.7	.8	18	11	<.1
13/10/81	7.0	4.3	-	8	4	.1
05/06/82	10.8	8.6	1.0	26	371	6.8
22/07/82	1.8	1.2	.8	32	21	.2

Table IX Analysis of Bed Sediment from the Ketili River and the Stikine River near Wrangell, Alaska

Ketili River - Station 1

Date D /M /Y	Sample Number	Dist. Bank	Ba µg/g	Cd µg/g	Cu µg/g	Mn µg/g	Ni µg/g
04/06/81	S243	2	1020	3	109	1240	103
04/06/81	S244	1	-	-	-	-	-
20/07/81	S355	1	-	-	150	-	200
05/06/82	S627	1	922	3	47	814	39
22/07/82	S727	1	760	8	66	943	57
05/10/82	S820	1	863	2	53	1180	40

Date D /M /Y	Pb µg/g	Sn µg/g	Sr µg/g	V µg/g	Ti µg/g	Si µg/g	Mg µg/g
04/06/81	36	68	297	175	5170	271000	20100
04/06/81	-	-	-	-	-	-	-
20/07/81	-	-	-	-	-	194175	14806
05/06/82	49	5	357	127	3440	237000	15100
22/07/82	26	4	246	138	3030	99800	17900
05/10/82	20	10	367	140	2740	268000	16000

Date D /M /Y	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g	Cr µg/g	Zn µg/g	P µg/g
04/06/81	21400	25100	90000	55000	168	150	1010
04/06/81	-	-	-	-	-	-	-
20/07/81	22524	-	63107	37864	291	200	-
05/06/82	30600	18900	69600	38800	93	70	840
22/07/82	21300	15300	68800	38200	81	185	1070
05/10/82	34100	21300	76100	36200	90	90	1280

Date D /M /Y	C µg/g	N µg/g	Part Size % <.5mm	Part Size % <.25mm	Part Size % <.125mm	Part Size %<.0625mm
04/06/81	-	-	-	-	-	-
04/06/81	6420	<5799	100	100	85	29
20/07/81	3990	<6203	-	-	-	-
05/06/82	11400	<5310	100	99	93	62
22/07/82	4160	<6292	100	100	88	37
05/10/82	4676	<5700	100	100	92	47

Date D /M /Y	Cells[7]/g (Bact)	mg·[4]C/g (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells[4]/g (Phyt)	mg·[4]C/g (Phyt)
04/06/81	-	-	-	-	-	-
04/06/81	30	18	.8	24	-	-
20/07/81	48	30	.8	20	-	-
05/06/82	9	5	.8	31	18	29
22/07/82	17	10	.8	36	2	5
05/10/82	17	11	.8	23	5	8

Table IX (cont'd) Ketili River - Station 2

Date D /M /Y	Sample Number	Dist. Bank	Ba µg/g	Cd µg/g	Cu µg/g	Mn µg/g	Ni µg/g
04/06/81	S245	2	985	2	137	1200	78
20/07/81	S356	1	-	-	2936	-	200
05/06/82	S628	1	889	4	34	814	68
22/07/82	S728	1	769	8	45	959	39
05/10/82	S821	1	857	2	54	1220	30

Date D /M /Y	Pb µg/g	Sn µg/g	Sr µg/g	V µg/g	Ti µg/g	Si µg/g	Mg µg/g
04/06/81	42	63	299	174	5230	200000	20100
20/07/81	-	-	-	-	-	192660	17110
05/06/82	45	3	388	168	4700	157000	15000
22/07/82	8	4	355	248	5200	99400	15900
05/10/82	20	9	368	135	3010	159000	15400

Date D /M /Y	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g	Cr µg/g	Zn µg/g	P µg/g
04/06/81	23000	22600	88000	54200	155	137	1010
20/07/81	28532	-	60550	66055	183	275	-
05/06/82	33400	20500	68300	48400	143	61	810
22/07/82	35100	19300	65600	69700	136	91	1300
05/10/82	31600	21800	75000	38200	89	96	1320

Date D /M /Y	C µg/g	N µg/g	Part Size % <.5mm	Part Size % <.25mm	Part Size % <.125mm	Part Size %<.0625mm
04/06/81	-	-	-	-	-	-
20/07/81	<5333	<5333	-	-	-	-
05/06/82	2060	<5510	100	99	78	35
22/07/82	5210	<5040	100	99	81	38
05/10/82	6525	<5900	100	100	98	88

Date D /M /Y	Cells[7]/g (Bact)	mg^{-4}C/g (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells[4]/g (Phyt)	mg^{-4}C/g (Phyt)
04/06/81	-	-	-	-	-	-
20/07/81	48	33	.9	24	-	-
05/06/82	3	2	.7	29	3	6
22/07/82	17	10	.8	41	4	4
05/10/82	11	8	.9	31	4	9

Table IX (cont'd) Ketili River - Station 3

Date D /M /Y	Sample Number	Dist. Bank	Ba µg/g	Cd µg/g	Cu µg/g	Mn µg/g	Ni µg/g
04/06/81	S247	2	1100	2	105	1180	94
04/06/81	S248	3	-	-	-	-	-
20/07/81	S357	1	-	-	81	-	200
13/10/81	S463	3	-	-	168	-	200
05/06/82	S629	3	898	4	32	799	28
22/07/82	S729	3	716	9	44	1140	40

Date D /M /Y	Pb µg/g	Sn µg/g	Sr µg/g	V µg/g	Ti µg/g	Si µg/g	Mg µg/g
04/06/81	20	57	318	175	5270	198000	19900
04/06/81	-	-	-	-	-	-	-
20/07/81	-	-	-	-	-	252032	15163
13/10/81	-	-	-	-	-	201680	14496
05/06/82	45	5	399	158	4280	230000	14700
22/07/82	17	5	350	368	7030	118000	16000

Date D /M /Y	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g	Cr µg/g	Zn µg/g	P µg/g
04/06/81	23300	25600	88200	53200	168	129	988
04/06/81	-	-	-	-	-	-	-
20/07/81	27480	-	73984	40650	244	138	-
13/10/81	21176	-	56302	36975	168	143	-
05/06/82	32100	21300	71000	48400	97	59	840
22/07/82	34700	18000	62500	104000	191	108	1370

Date D /M /Y	C µg/g	N µg/g	Part Size % <.5mm	Part Size % <.25mm	Part Size % <.125mm	Part Size %<.0625mm
04/06/81	-	-	-	-	-	-
04/06/81	2471	<6825	100	100	95	65
20/07/81	7655	<5909	-	-	-	-
13/10/81	<6997	<6997	100	99	81	22
05/06/82	2700	<5340	100	100	75	24
22/07/82	4200	<5267	100	100	67	18

Date D /M /Y	Cells[7]/g (Bact)	mg-[4]C/g (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells[8]/g (Phyt)	mg-[4]C/g (Phyt)
04/06/81	-	-	-	-	-	-
04/06/81	22	15	.9	16	-	-
20/07/81	33	21	.8	19	-	-
13/10/81	16	10	.8	21	2	3
05/06/82	6	5	1.0	28	4	4
22/07/82	16	9	.7	42	3	4

Table IX (cont'd) 00AK08CF0001 (#7) Stikine River near Wrangell, Alaska

Date D /M /Y	Sample Number	Dist. Bank	Ba µg/g	Cd µg/g	Cu µg/g	Mn µg/g	Ni µg/g
04/06/81	S249	3	1200	2	63	882	20
20/07/81	S358	3	-	-	95	-	200
13/10/81	S461	3	-	-	616	-	200
05/06/82	S630	3	896	2	43	808	32
22/07/82	S730	3	841	9	65	865	55
05/10/82	S823	3	816	2	62	1350	40

Date D /M /Y	Pb µg/g	Sn µg/g	Sr µg/g	V µg/g	Ti µg/g	Si µg/g	Mg µg/g
04/06/81	37	50	521	106	3140	201000	11200
20/07/81	-	-	-	-	-	189655	15991
13/10/81	-	-	-	-	-	172185	12218
05/06/82	68	4	374	130	3700	224000	14200
22/07/82	22	4	351	129	3350	109000	15400
05/10/82	20	10	358	140	3100	82300	16500

Date D /M /Y	Ca µg/g	Na µg/g	Al µg/g	Fe µg/g	Cr µg/g	Zn µg/g	P µg/g
04/06/81	23000	31800	87600	31700	103	69	694
20/07/81	22931	-	59483	39655	172	155	-
13/10/81	18079	-	51656	32450	199	146	-
05/06/82	30300	20400	70500	38700	77	65	820
22/07/82	30300	21200	72600	35500	83	98	1200
05/10/82	35100	21700	74400	38900	93	105	1380

Date D /M /Y	C µg/g	N µg/g	Part Size % <.5mm	Part Size % <.25mm	Part Size % <.125mm	Part Size %<.0625mm
04/06/81	-	-	-	-	-	-
20/07/81	3518	<6498	-	-	-	-
13/10/81	2493	<7128	100	92	49	12
05/06/82	1930	<5050	100	100	88	47
22/07/82	4450	<5466	100	100	95	58
05/10/82	5256	<5600	100	99	90	29

Date D /M /Y	Cells[7]/g (Bact)	mg^{-4}C/g (Bact)	Cell L. (Bact) µm	% Active (Bact)	Cells[4]/g (Phyt)	mg^{-4}C/g (Phyt)
04/06/81	-	-	-	-	-	-
20/07/81	31	21	.9	25	-	-
13/10/81	13	8	.8	16	4	8
05/06/82	14	8	1.1	21	3	4
22/07/82	28	19	.9	36	2	2
05/10/82	13	7	.8	33	9	18

Table X

Algal Species Collected from the Stikine River Basin, Including Authorities

Chrysophyta
Bacillariophyceae

Achnanthes lanceolata (Brebisson) Grunow
Achnanthes lanceolata v. rostrata (Östrup) Hustedt
Achnanthes minutissima Kützing
Amphora sp.
Amphora sp. A
Asterionella formosa Hassall
Asterionella gracillima Hantzsch in Rabenhorst
Caloneis bacillum (Grunow) Cleve
Ceratoneis arcus (Ehrenberg) Kützing
Certatoneis arcus v. amphioxys (Rabenhorst) Brun
Cocconeis diminuta Pantocsek
Cocconeis placentula Ehrenberg
Cyclotella bodanica Eulenstein in Grunow
Cymbella affinis Kützing
Cymbella caespitosa (Kützing) Brun
Cymbella cistula (Hemprich) Kirchner
Cymbella turgida Gregory
Cymbella ventricosa (Kützing) Kützing
Diatoma anceps (Ehrenberg) Kirchner
Diatoma elongatum Lyngbye
Diatoma hiemale (Lyngbye) Heiberg
Diatoma hiemale v. quadratum (Kützing) Ross
Diatoma vulgare Bory
Epithemia turgida (Ehrenberg) Kützing
Eunotia tridentula v. perpusilla Grunow in Van Heurck
Fragilaria capucina Desmazieres
Fragilaria capucina v. mesolepta Rabenhorst
Fragilaria construens (Ehrenberg) Grunow
Fragilaria construens v. binodis (Ehrenberg) Grunow
Fragilaria construens v. subsalina Hustedt
Fragilaria crotonensis Kitton
Fragilaria pinnata Ehrenberg
Fragilaria vaucheriae (Kützing) Petersen
Gomphonema sp.
Gomphonema abbreviatum Agardh
Gomphonema constrictum Ehrenberg
Gomphonema herculeanum Ehrenberg

Table X (cont'd)

Gomphonema olivaceum (Lyngbye) Kützing
Gomphonema parvulum (Kützing) Kützing
Gyrosigma sp.
Melosira sp.
Melosira granulata (Ehrenberg) Ralfs in Pritchard
Melosira italica (Ehrenberg) Kützing
Melosira varians Agardh
Meridion circulare (Greville) Agardh
Navicula sp.
Navicula sp. A
Navicula bacillum Ehrenberg
Navicula canalis Patrick
Navicula confervacea (Kützing) Grunow in Van Heurck
Navicula contenta Grunow in Van Heurck
Navicula cryptocephala Kützing
Navicula cryptocephala v. veneta (Kützing) Rabenhorst
Navicula cuspidata (Kützing) Kützing
Navicula exigua (Gregory) Grunow in Van Heurck
Navicula gastrum (Ehrenberg) Kützing
Navicula radiosa Kützing
Navicula zanoni Hustedt
Neidium sp.
Nitzschia sp.
Nitzschia sp. A
Nitzschia acicularis Wm. Smith
Nitzschia dissipata (Kützing) Grunow
Nitzschia filiformis (Wm. Smith) Van Heurck
Nitzschia hantzschiana Rabenhorst
Nitzschia palea (Kützing) Wm. Smith
Nitzschia tryblionella Hantzsch in Rabenhorst
Rhoicosphenia curvata (Kützing) Grunow
Rhopalodia sp.
Rhopalodia sp. A
Rhopalodia gibba (Ehrenberg) O.F. Muller
Stauroneis sp.
Surirella brightwellii Wm. Smith
Surirella ovalis Brébisson
Surirella ovata Kützing
Synedra actinastroides Lemmermann
Synedra acus Kützing
Synedra nana Meister
Synedra tabulata (Agardh) Kützing

Table X (cont'd)

Synedra ulna (Nitzsch) Ehrenberg
Synedra ulna v. oxyrhynchus (Kützing) Van Heurck
Synedra ulna v. oxyrhynchus (f. contracta) Hustedt
Tabellaria fenestrata (Lyngbye) Kützing
Tabellaria flocculosa Roth (Kützing)

Other Chrysophyta

Dinobryon sertularia Ehrenberg
Mallomonas sp.

Chlorophyta

Chlamydomonas sp.
Spirogyra sp.
Ulothrix sp.

Chryptophyta

Chroomonas acuta Utermöhl
Cryptomonas borealis Skuja

Cyanophyta

Merismopedia sp.
Oscillatoria sp.
Oscillatoria planctonica Woloszynska
Plectonema sp.

Table XI

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River June, 1981

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ >50 cells/ml

Species	Station #							Ketili River		
	1	2	3	4	5	6	7	1	2	3
Chrysophyta										
Bacillariophyceae										
Achnanthes minutissima	+	+	+		+	+	+	+	+	+
Asterionella formosa		++								
Caloneis bacillum								+		
Ceratoneis arcus	+		+	+	++	+	+	+		
Ceratoneis arcus v. amphioxys	+			+						
Cocconeis placentula						+	+			
Cymbella affinis										+
Cymbella caespitosa						+			+	
Cymbella ventricosa	+									
Diatoma elongatum	+		+		+					
Diatoma hiemale v. quadratum	+	+								
Fragilaria capucina						+				
Fragilaria capucina v. mesolepta		+								
Fragilaria construens	+									
Fragilaria construens v. binodis		+								
Fragilaria construens v. subsalina						+				
Fragilaria crotonensis	+	+++		+	+		+	+		
Fragilaria vaucheriae	+	+	+	+						
Gomphonema olivaceum	+	+	+	+	+	+	+		+	++
Gomphonema parvulum	+									
Melosira varians			+			+				
Meridion circulare	+	+	+						+	+
Navicula sp. A	+	+				+	+	+	+	++
Navicula canalis						+				
Navicula cryptocephala	+				+					
Navicula exigua					+		+			
Navicula radiosa	+	+					+			
Neidium sp. A	+	+							+	
Nitzschia sp. A									+	
Nitzschia dissipata	+									
Nitzschia filiformis									+	
Nitzschia hantzschiana										+
Nitzschia palea	+		+			+	+			+
Rhopalodia sp.										+
Rhopalodia gibba										+
Synedra acus			+	+	+					
Synedra nana							+			+
Synedra ulna	+		+		+	+	+		+	
Synedra ulna v. oxyrhynchus	+		+							
Tabellaria flocculosa			+							
Other Chrysophyta										
Dinobryon sertularia										+

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River July, 1981

+	0-10 cells/ml
++	10-20 cells/ml
+++	20-50 cells/ml
++++	>50 cells/ml
P	Present

Species	Station #							Ketili River		
	1	2	3	4	5	6	7	1	2	3
Chrysophyta										
Bacillariophyceae										
Achnanthes minutissima	+	+	+	+++	++++	++++	++++	++	++++	++
Asterionella formosa					++					
Ceratoneis arcus	+		+		+++	+++	++			
Ceratoneis arcus v. amphioxys		+	+							
Cymbella affinis						++				
Cymbella turgida					++					
Cymbella ventricosa	+		+	++		++		+++		
Diatoma hiemale v. quadratum						++				
Diatoma vulgare			+							
Epithemia turgida					++					
Fragilaria capucina	+									
Fragilaria crotonensis		+			++	++	+++			
Gomphonema olivaceum	+	+	+	++	++		++		+++	
Meridion circulare	+	+	+				+++			
Navicula sp. A		+			+++	++	++			
Navicula canalis				++						
Navicula cryptocephala				++			++			
Nitzschia palea	+	+			++	+++	+++		++	
Synedra ulna	+			++		+++	+++			
Synedra ulna v. oxyrhynchus	+	+		++			+++			
Other Chrysophyta										
Dinobryon sertularia					++	++	++			
Cyanophyta										
Oscillatoria planctonica	P									

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River October, 1981*

+	0-10 cells/ml
++	10-20 cells/ml
+++	20-50 cells/ml
++++	> 50 cells/ml
P	Present

* Quantitative comparisons between stations are not appropriate because counts were made by two operators

Species	Station #							Ketili River
	1	2	3	4	5	6	7	3
Chrysophyta								
Bacillariophyceae								
Achnanthes lanceolata				++				
Achnanthes minutissima	+	+	+	++++		++++		
Asterionella formosa		+					+	
Ceratoneis arcus	+	+	+	+++	+			
Ceratoneis arcus v. amphioxys	+		+		+	++		
Cocconeis placentula		+						
Cyclotella bodanica	+							
Cymbella affinis	+							
Cymbella caespitosa		+					+	
Cymbella ventricosa	+	+				++		
Diatoma elongatum	++	+	+					
Diatoma hiemale v. quadratum		+	+			+++		
Diatoma vulgare	+		+					
Eunotia tridentula v. perpusilla						++		
Fragilaria capucina	+	+	+		+			
Fragilaria construens				++				
Fragilaria construens v. binodis		+						
Fragilaria crotonensis		+		++			+	
Fragilaria vaucheriae	+	+	+		+	++	+	
Gomphonema sp.			+					
Gomphonema olivaceum	++	+	+	+++		++	+	
Melosira granulata	+							
Melosira varians		+		++				
Meridion circulare		+	+					
Navicula sp. A	+		+	++++		+++	+	
Navicula radiosa						++		
Nitzschia palea	+	+	+		+	+++		
Synedra ulna	+	+				++		
Synedra ulna v. oxyrhynchus	+	+					+	
Tabellaria fenestrata						++		
Tabellaria flocculosa				++		+++		
Other Chrysophyta								
Dinobryon sertularia						++	+	
Mallomonas sp.		+						
Chlorophyta								
Ulothrix sp.				P				
Chryptophyta								
Chroomonas acuta	+	+	+		+			+
Cryptomonas borealis								+
Merismopedia sp.				++++				
Oscillatoria sp. A	P							

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River February, 1982

Species	Station #		
	5	6	7
Chrysophyta			
Bacillariophyceae			
Ceratoneis arcus	+		
Cocconeis placentula		+	
Cymbella affinis		+	
Cymbella ventricosa		+	
Diatoma elongatum			+
Diatoma vulgare		+	
Fragilaria crotonensis	+		
Gomphonema olivaceum	+	+	+
Navicula sp.	+		+
Navicula cryptocephala	+	+	
Navicula cryptocephala v. veneta		+	
Navicula gastrum	+		
Nitzschia sp. A.			+
Nitzschia palea	+		+
Surirella ovalis	+		
Synedra ulna	+		+
Cyanophyta			
Plectonema sp.			+

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ >50 cells/ml

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River May-June, 1982

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ > 50 cells/ml

Species	Station # 1	2	3	4	5	6	7	Ketili River 1	2	3
Chrysophyta										
Bacillariophyceae										
Achnanthes minutissima		+		+	++	+++	+++	++++	++	++++
Asterionella formosa		+					++			
Asterionella gracillima		+					+			
Caloneis bacillum						+		++		
Ceratoneis arcus		+	+++	++	++	++	+++	+++	++	++++
Cocconeis diminuta	+			+			+		+++	
Cocconeis placentula		+		+	+	+			++	
Cymbella affinis	+	+	+				+	+		++
Cymbella ventricosa	+	+	+		+	++	+	++	++	
Diatoma hiemale	++									
Diatoma vulgare			+							
Fragilaria capucina		+	+	+			+++			
Fragilaria construens		+				+++				
Fragilaria crotonensis		+	+							
Gomphonema abbreviatum						+		+		
Gomphonema constrictum	+									
Gomphonema olivaceum	++	+	+++	+++		+++	++++	++++	++++	++++
Gomphonema parvulum						++	+		++	
Melosira sp.			+							
Melosira italica						+				
Melosira varians				+			+			
Meridion circulare			+	++	+	+	+		++	++
Navicula sp.	++					+				
Navicula bacillum			+				+			
Navicula canalis							++			
Navicula confervacea			+			+++				
Navicula cryptocephala	+++	+	++	++	++	+++	+++	+++		
Navicula radiosa						+	+	++		++
Navicula zanoni		+								
Nitzschia sp. A	+			+			+		+++	
Nitzschia filiformis					+	+	+			
Nitzschia palea	+	+	+	++	+	+++	+++	+++		++++
Nitzschia tryblionella				+						
Rhoicosphenia curvata			+			+				
Synedra actinastroides					+	+	++			
Synedra acus							+			
Synedra nana		+				+				
Synedra tabulata		+								
Synedra ulna	+++	+	++	+						
Synedra ulna v. oxyrhynchus	+++		+		+	+++	+++	++	+++	+++
Tabellaria fenestrata							+			
Tabellaria flocculosa			+					+		
Chlorophyta										
Chlorophyta (Unidentified)		P								

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River July, 1982

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ >50 cells/ml
P Present

Species	Station #							Ketili River		
	1	2	3	4	5	6	7	1	2	3
Chrysophyta										
Bacillariophyceae										
Achnanthes minutissima	+++	+		+	++	++	++	+	+	+
Asterionella formosa	+									+
Caloneis bacillum	+									
Ceratoneis arcus	+		+		++			+		
Ceratoneis arcus v. amphioxys				+			++			
Cocconeis diminuta	+							+		
Cymbella affinis	+									
Cymbella ventricosa	+									
Diatoma elongatum			+	+	++					
Diatoma hiemale						++				
Fragilaria capucina	++				++		++			
Fragilaria crotonensis		+++			++		++	+		
Fragilaria vaucheriae										+
Gomphonema olivaceum	++	+		+			++	+		
Melosira varians	+									
Meridion circulare	++									
Navicula confervacea	+									
Navicula contenta	+									
Navicula cryptocephala	+	+								
Navicula radiosa				+						
Nitzschia sp. A	++	+								
Nitzschia palea	+	+	+			++	++			
Synedra ulna v. oxyrhynchus	+	+		+	++	+				+
Chlorophyta										
Chlamydomonas resting spore					++					

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River October, 1982

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ > 50 cells/ml

Species	Station #							Ketili River	
	1	2	3	4	5	6	7	1	2
Chrysophyta									
Bacillariophyceae									
Achnanthes lanceolata	+					+			
Achnanthes minutissima	+++	+	+	++	++	++	+		+
Asterionella formosa	+	+							
Ceratoneis arcus	+	+	+						
Ceratoneis arcus v. amphioxys	+	+	++						+
Cocconeis diminuta			+						
Cocconeis placentula	+	+				+			
Cymbella affinis		+				+			
Cymbella cistula							+		
Cymbella ventricosa	+		+						
Diatoma elongatum	+	+	+		+	+	+		+
Diatoma hiemale						+			
Diatoma hiemale v. quadratum						+			
Diatoma vulgare						+			
Fragilaria capucina	+		+						
Fragilaria capucina v. mesolepta							+		
Fragilaria construens	++	+	+	++		++	++		
Fragilaria crotonensis	+	+		++					
Fragilaria pinnata	+++		+						
Fragilaria vaucheriae	+++								
Gomphonema abbreviatum	++								
Gomphonema olivaceum	++	+	++		+	++		++	
Gomphonema parvulum	+								
Melosira varians	+								
Navicula sp. A	++	+	+		+	+	++		++
Navicula canalis	+		+						
Navicula confervacea	+								
Navicula cryptocephala	+	+	+						
Navicula cuspidata									+
Navicula radiosa		+			+				
Nitzschia acicularis									+
Nitzschia palea	++	+	+		+	+		+	++
Surirella brightwellii							+		
Synedra actinastroides	+		+						
Synedra nana	+								
Synedra ulna	+	+	+	++		+			
Synedra ulna v. oxyrhynchus	+	+	+			+			++
Other Chrysophyta									
Dinobryon sertularia	+								
Chlorophyta									
Chlamydomonas cyst	+			++			+		
Cyanophyta									
Oscillatoria sp.						+			
Spirogyra sp.					+				

Table XI (cont'd)

Occurrence of Phytoplankton Species at Seven Principal Sampling Sites and in the Ketili River February, 1983

Species	Station #		
	5	6	7
Chrysophyta			
Bacillariophyceae			
Achnanthes lanceolata v. rostrata	+		
Achnanthes minutissima	+	+	+
Amphora sp. A		+	
Ceratoneis arcus		+	
Ceratoneis arcus v. amphioxys	+	+	
Cocconeis diminuta	+		
Cocconeis placentula		+	
Cymbella ventricosa	+		
Diatoma anceps		+	
Diatoma elongatum		+	
Diatoma hiemale v. quadratum		+	
Fragilaria capucina	+	+	+
Fragilaria capucina v. mesolepta		+	
Fragilaria construens	+		
Fragilaria construens v. subsalina	+	+	
Fragilaria crotonensis	+	+	+
Fragilaria vaucheriae		+	
Gomphonema olivaceum		+	
Meridion circulare	+	+	
Navicula sp. A	+	+	
Navicula canalis	+	+	
Nitzschia sp. A		+	
Nitzschia dissipata		+	
Nitzschia palea	+	+	
Surirella ovata		+	
Synedra ulna		+	
Chryptophyta			
Chroomonas acuta			+

\+ 0-10 cells/ml
++ 10-20 cells/ml
+++ 20-50 cells/ml
++++ > 50 cells/ml

Table XII

Occurrence of Algae in Bed Sediments
October, 1981

Species	Station #7	Ketili River
Chrysophyta		
Bacillariophyceae		
Achnanthes minutissima	+	+
Ceratoneis arcus		+
Cocconeis placentula	+	
Cymbella affinis		+
Cymbella ventricosa	++	
Fragilaria vaucheriae	+	
Gomphonema olivaceum	++	+
Meridion circulare		+
Navicula sp.		+
Navicula radiosa	++	
Stauroneis sp.	+	
Synedra ulna		+
Synedra ulna v. oxyrhynchus	++	
Tabellaria flocculosa	++	

\+ 0 - 5,000 cells/g
++ 5,000 - 10,000 cells/g
+++ > 10,000 cells/g

Table XII (cont'd)

Occurrence of Algae in Bed Sediments
June, 1982

Species	Station # 7	Ketili River 1	2	3
Chrysophyta				
Bacillariophyceae				
Achnanthes minutissima	+	+++	++	+++
Amphora sp. A				+
Caloneis bacillum		++		
Ceratoneis arcus	+	+++	+	+
Cocconeis diminuta		+	+	
Cocconeis placentula	+			
Cymbella turgida		+		
Cymbella ventricosa		+	+	+
Diatoma hiemale		+		
Fragilaria capucina	+			+
Fragilaria capucina v. mesolepta		+		
Fragilaria crotonensis	+			
Gomphonema abbreviatum	+		+	
Gomphonema olivaceum	+	+++	+	+
Gomphonema parvulum		+	+	
Melosira varians			+	
Meridion circulare	+	+	++	
Navicula sp. A.				+
Navicula canalis			+	
Navicula confervacea	+			
Navicula cryptocephala	+	+++	+	+
Navicula radiosa			+	
Navicula zanoni				+
Nitzschia sp. A.		++	+	
Nitzschia palea	+	+++	+	+
Rhopalodia sp. A.	+			
Surirella ovata		+		+
Synedra ulna	+	+++		
Synedra ulna v. oxyrhynchus				+

\+ 0 - 5,000 cells/g
++ 5,000 - 10,000 cells/g
+++ >10,000 cells/g

Table XII (cont'd)

Occurrence of Algae in Bed Sediments
July, 1982

Species	Station # 7	Ketili River 1	2	3
Chrysophyta				
Bacillariophyceae				
Achnanthes minutissima	++	++	++	++
Asterionella formosa		+		
Caloneis bacillum			+	
Ceratoneis arcus	+			
Cocconeis diminuta			+	
Cymbella affinis			+	
Cymbella ventricosa				+
Diatoma elongatum			+	+
Fragilaria capucina		+		
Fragilaria construens		+		
Gomphonema olivaceum	++		+	+
Gomphonema parvulum			++	++
Melosira varians		+		
Meridion circulare	+		+	+
Navicula canalis		+		
Navicula cryptocephala		+	+	
Navicula exigua		+		
Nitzschia filiformis			+	
Nitzschia palea		+	++	++
Stauroneis sp.				+
Cyanophyta				
Oscillatoria sp.		p		

\+ 0 - 5,000 cells/g
++ 5,000 - 10,000 cells/g
+++ >10,000 cells/g

Table XII (cont'd)

Occurrence of Algae in Bed Sediments
October, 1982

Species	Station # 7	Ketili River 1	Ketili River 2
Chrysophyta			
Bacillariophyceae			
Achnanthes minutissima	+++	+++	+
Amphora sp. A	+		
Ceratoneis arcus	+++	+	+
Ceratoneis arcus v. amphioxys	+		++
Cocconeis diminuta			+
Cocconeis placentula	+	+	
Cymbella affinis		+	+
Cymbella ventricosa	++	+	+
Diatoma elongatum		+	+
Fragilaria capucina	++	+	
Fragilaria capucina v. mesolepta	+		
Fragilaria construens		++	
Gomphonema herculeanum	+		+
Gomphonema olivaceum	++		+
Gomphonema parvulum	++		++
Gyrosigma sp.		+	
Melosira varians		+	
Navicula sp. A.		+	
Navicula canalis	+++		+
Nitzschia palea	+++	+	+
Surirella ovata			+
Synedra acus			+
Synedra ulna v. oxyrhynchus (f. contracta)	+	+	

\+ 0 - 5,000 cells/g
++ 5,000 - 10,000 cells/g
+++ >10,000 cells/g